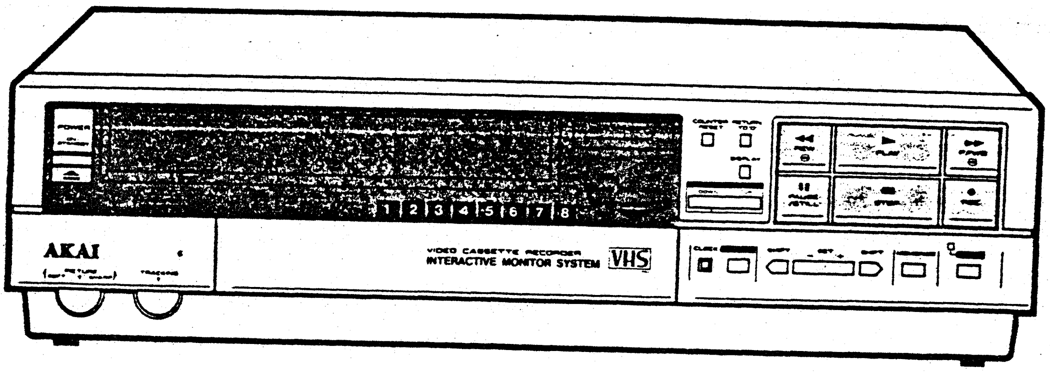
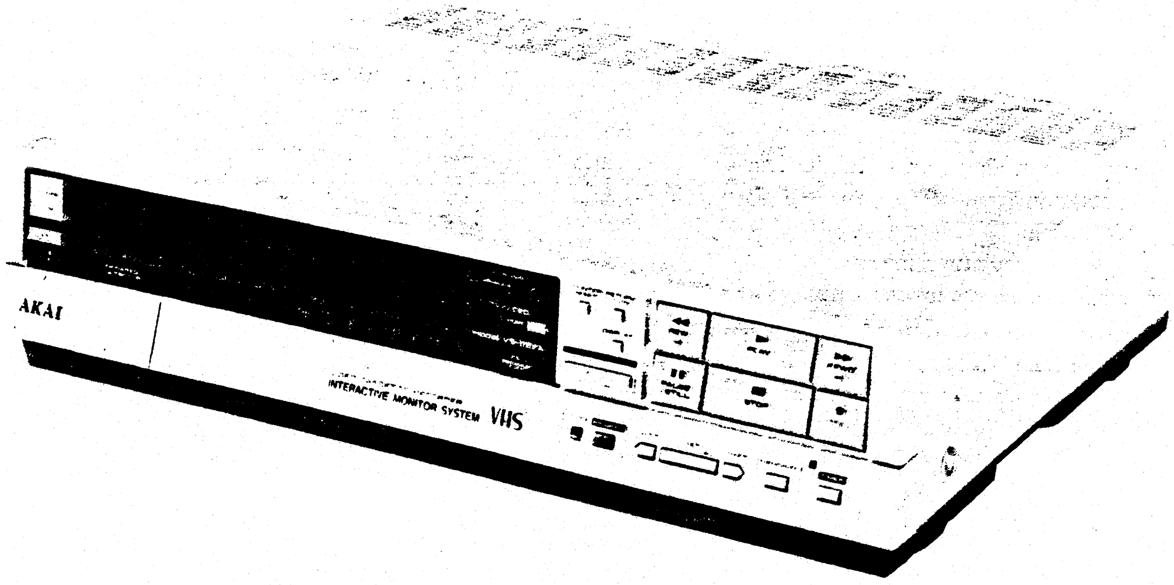
AKAI SERVICE MANUAL


POWER
1 2 3 4 5 6 7 8
AKAI
VIDEO CASSETTE RECORDER
INTERACTIVE MONITOR SYSTEM
VHS

VIDEO CASSETTE RECORDER

MODEL VS-205EK


AKAI
INTERACTIVE MONITOR SYSTEM
VHS

VIDEO CASSETTE RECORDER

MODEL VS-112EG/EK/EK(Y1)/EA ED/EV-M/EZ/ES

MODEL VS-105EK

MODEL VS-115EO/EO(Y1)

MODEL VS-116EO-G

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SECTION 1

SERVICE MANUAL

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For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

AKAI

MODEL VS-112EG/EK/EK(Y1)/EA ED/EV-M/EZ/ES
MODEL VS-205EK
MODEL VS-115EO/EO(Y1)
MODEL VS-116EO-G

SCHEMATIC DIAGRAM AND PC BOARDS

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I. SPECIFICATIONS

1-1. SPECIFICATIONS VS-112EG/EK/EK(Y1)/EA/ED/EV-M/EZ/ES

Format		VHS Standard
Video recording system		Rotary, slant azimuth two-head helical scan system
Rotary Heads		2 video heads
RF input	EA	System B, G VHF: ch 0 to 5, 5A, 6 to 11 UHF: ch 21 to 69
	ED	System D VHF: ch 1 to 12 UHF: ch 13 to 56
	EG	System B, G VHF: ch 2 to 12 UHF: ch 21 to 69
	EK/EK (Y1)	System I UHF: ch 21 to 69
	ES	System I VHF: ch A to J (Ireland), ch 4 to 13 (South Africa) UHF: ch 21 to 69
	EV-M	System B, G VHF: ch 2 to 12 UHF: ch 21 to 69
	EZ	System B, G VHF: ch 1 to 9 UHF: ch 21 to 69
RF output	EA	System B type modulation VHF: ch 0, 1 switchable (preset ch 1)
	ED	System D type modulation VHF: ch 4, 5 switchable (preset ch 5)
	EG	System G type modulation UHF: ch 30 to 39 adjustable (preset ch 36)
	EK/EK (Y1)	System I type modulation UHF: ch 30 to 39 adjustable (preset ch 36)
	ES	System I type modulation UHF: ch 30 to 39 adjustable (preset ch 36)
	EV-M	System B type modulation VHF: ch 3,4 switchable (preset ch 4)
	EZ	System B type modulation VHF: ch 2, 3 switchable (preset ch 3)
Recording (line input)		PAL, CCIR (System B, G, I)
Playback (line input)		PAL, CCIR (System B, G, I)
Video	Line input level	0.5 to 2.0 Vp-p/75 ohms, unbalanced
	Line output level	1.0 Vp-p/75 ohms, unbalanced
	S/N ratio	More than 45 dB
	Horizontal resolution	More than 250 lines
Audio	Line input level	–8 dBm/50 kohms, unbalanced
	Line output level	–6 dBm/1 kohms, unbalanced
	S/N ratio	More than 40 dB
	Frequency response	70 to 10,000 Hz
Recording/Playback time		240 min. with E-240 cassette
Tape speed	SP Mode	23.39 mm/sec
Quick finder		Approx. 7 times normal speed (noise bars fixed)
FF, REW time		Approx. 5 min. with E-240 cassette
Timer	Programs	4 programs/2 week and sleep timer
	Clock reference	Quartz crystal
Display		TV screen (Tape counter, Timer etc.)
Power requirements	EA	240V AC, 50 Hz
	ED	220V AC, 50 Hz
	EG	110V/220V AC, 50 Hz/60 Hz
	EK/EK (Y1)	200V/240V AC, 50 Hz
	ES	220V/250V AC, 50 Hz
	EV-M	115/230V AC, 50 Hz/60Hz
	EZ	230V AC, 50 Hz
Power consumption		28W
Operating temperature		5°C to 40°C (41°F to 104°F)
Dimensions		440 (W) x 108 (H) x 380 (D) mm (17.3 x 4.3 x 15.0 inches)
Weight		7.6 kg (16.7 lbs)

STANDARD ACCESSORY

Antenna cable
Remote Control Unit RC-V155
Batteries for Remote Control

* For improvement purposes, specifications and design are subject to change without notice.

RC-V155

System	Infrared pulse position modulation system
Carrier frequency	38 kHz ± 0.2 kHz
Range	More than 5 meters
Directivity	±15 (at 4 meters)
Batteries	R6 (or AA, SUM-3) x 2 (3 volts)
Dimensions	43 (W) x 20 (H) x 161 (D) mm
Weight	60g (without batteries)

1-2. SPECIFICATIONS VS-115EO/EO (Y1)

Format		VHS Standard
Video recording system		Rotary, slant azimuth two-head helical scan system
Rotary Heads		2 video heads
RF input	EO/EO (Y1)	System B, G VHF: Low ch 2 to 4, S1 to S3 High ch M1 to M10, 5 to 12, U1 to U10 UHF: ch 21 to 69
RF output	EO/EO (Y1)	System G type modulation UHF: ch 30 to 39 adjustable (preset ch 36)
Recording (line input)		PAL, CCIR (System B, G, I)
Playback (line input)		PAL, CCIR (System B, G, I)
Video	Line input level	0.5 to 2.0 Vp-p/75 ohms, unbalanced
	Line output level	1.0 Vp-p/75 ohms, unbalanced
	S/N ratio	More than 45 dB
	Horizontal resolution	More than 250 lines
Audio	Line input level	–8 dBm/50 kohms, unbalanced
	Line output level	–6 dBm/1 kohms, unbalanced
	S/N ratio	More than 40 dB
	Frequency response	70 to 10,000 Hz
Recording/Playback time		240 min. with E-240 cassette
Tape speed	SP Mode	23.39 mm/sec
Quick finder	SP Mode	Approx. 7 times normal speed (noise bars fixed)
FF, REW time		Approx. 5 min. with E-240 cassette
Timer	Programs	4 programs/2 week and sleep timer
	Clock reference	Quartz crystal
Display		TV screen (Tape counter, Timer etc.)
Power requirements	EO/EO (Y1)	220V AC, 50 Hz
Power consumption		28W
Operating temperature		5°C to 40°C (41°F to 104°F)
Dimensions		440 (W) x 108 (H) x 380 (D) mm (17.3 x 4.3 x 15.0 inches)
Weight		7.6 kg (16.7 lbs)

STANDARD ACCESSORY
Antenna cable
Remote Control Unit RC-V155
Batteries for Remote Control

* For improvement purposes, specifications and design are subject to change without notice.

RC-V155

System	Infrared pulse position modulation system
Carrier frequency	38 kHz ± 0.2 kHz
Range	More than 5 meters
Directivity	±15 (at 4 meters)
Batteries	R6 (or AA, SUM-3) x 2 (3 volts)
Dimensions	43 (W) x 20 (H) x 161 (D) mm
Weight	60g (without batteries)

1-3. SPECIFICATIONS VS-116EO-G

Format		VHS Standard
Video recording system		Rotary, slant azimuth two-head helical scan system
Rotary Heads		2 video heads
RF input		System B, G VHF: Low ch 2 to 4, S1, S2 High ch S3 to S10, 5 to 12, S11 to S22 UHF: ch 21 to 69
RF output		System G type modulation UHF: ch 30 to 39 adjustable (preset ch 36)
Recording (line input)		PAL, CCIR (System B, G, I)
Playback (line input)		PAL, CCIR (System B, G, I)
Video	Line input level	0.5 to 2.0 Vp-p/75 ohms, unbalanced
	Line output level	1.0 Vp-p/75 ohms, unbalanced
	S/N ratio	More than 45 dB
	Horizontal resolution	More than 250 lines
Audio	Line input level	−8 dBm/50 kohms, unbalanced (309 mVrms)
	Line output level	−6 dBm/1 kohms, unbalanced (388 mVrms)
	S/N ratio	More than 40 dB
	Frequency response	70 to 10,000 Hz
Recording/Playback time		240 min. with E-240 cassette
Tape speed	SP Mode	23.39 mm/sec
Quick finder		Approx. 7 times normal speed (noise bars fixed)
FF, REW time		Approx. 5 min. with E-240 cassette
Timer	Programs	4 programs/2 week and sleep timer
	Clock reference	Quartz crystal
Display		TV screen (Tape counter, Timer etc.)
Power requirements		220V AC, 50 Hz
Power consumption		28W
Operating temperature		5°C to 40°C (41°F to 104°F)
Dimensions		440 (W) x 108 (H) x 380 (D) mm (17.3 x 4.3 x 15.0 inches)
Weight		7.6 kg (16.7 lbs)

STANDARD ACCESSORY
- Antenna cable
- Remote Control Unit RC-V155
- Batteries for Remote Control

* For improvement purposes, specifications and design are subject to change without notice.

RC-V155

System	Infrared pulse position modulation system
Carrier frequency	38 kHz ± 0.2 kHz
Range	More than 5 meters
Directivity	±15 (at 4 meters)
Batteries	R6 (or AA, SUM-3) x 2 (3 volts)
Dimensions	43 (W) x 20 (H) x 161 (D) mm
Weight	60g (without batteries)

1-4. SPECIFICATIONS VS-105EK

Format		VHS Standard
Video recording system		Rotary, slant azimuth two-head helical scan system
Rotary Heads		2 video heads
RF input		System I UHF: ch 21 to 69
RF output		System I type modulation UHF: ch 30 to 39 adjustable (preset ch 36)
Recording (line input)		PAL, CCIR (System B, G, I)
Playback (line input)		PAL, CCIR (System B, G, I)
Video	Line input level	0.5 to 2.0 Vp-p/75 ohms, unbalanced
	Line output level	1.0 Vp-p/75 ohms, unbalanced
	S/N ratio	More than 45 dB
	Horizontal resolution	More than 250 lines
Audio	Line input level	−8 dBm/50 kohms, unbalanced (309 mVrms)
	Line output level	−6 dBm/1 kohms, unbalanced (388 mVrms)
	S/N ratio	More than 40 dB
	Frequency response	70 to 10,000 Hz
Recording/Playback time		240 min. with E-240 cassette
Tape speed	SP Mode	23.39 mm/sec
Quick finder		Approx. 7 times normal speed (noise bars fixed)
FF, REW time		Approx. 5 min. with E-240 cassette
Timer	Programs	4 programs/2 week and sleep timer
	Clock reference	Quartz crystal
Display		TV screen (Tape counter, Timer etc.)
Power requirements		200V/240V AC, 50 Hz
Power consumption		28W
Operating temperature		5°C to 40°C (41°F to 104°F)
Dimensions		440 (W) x 108 (H) x 380 (D) mm (17.3 x 4.3 x 15.0 inches)
Weight		7.6 kg (16.7 lbs)

* For improvement purposes, specifications and design are subject to change without notice.

II. STANDARD TV BROADCASTING SYSTEMS IN THE WORLD (PAL, SECAM and NTSC) AND CORRESPONDING AKAI VCR MODEL NUMBERS

Three different color TV systems – PAL, SECAM and NTSC – are now used in the world. As different models of the Akai VS series VCR's conform to different standards, please note the following:

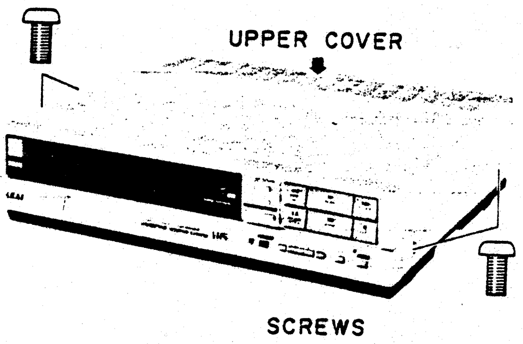
1. The Models for exclusive use with the PAL color system are as follows:
   PAL (B/G) ..... Models EA, EG, EO, EZ
   PAL (I) .... Models EK, ES
   PAL (D) .... Model ED
2. SECAM (system B/G) color programs in certain areas of the Middle East might be recorded with the Akai PAL (B/G) model, but there is no interchangeability of these recorded cassette tapes with other PAL-VHS recorders or SECAM-VHS recorders.
3. Please use the exclusive SECAM-VHS recorders in French SECAM (system L) broadcasting areas. (Models S, SEG)
4. The Models for exclusive use with the NTSC color system are as follows:
   Models: U, UM, J.
5. Model EV-M for PAL (B/G) and Middle East SECAM (B/G), and Model EGN for 4 system reception.
6. For camera recording, connect a video camera and camera adaptor built to the standard corresponding to your VCR.

III. DISMANTLING OF UNIT

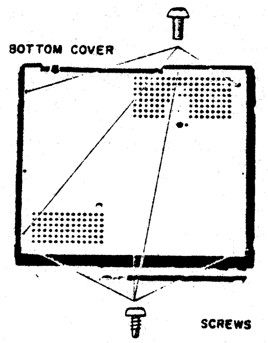
In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

* Photographs employed here are of model VS-112EA.

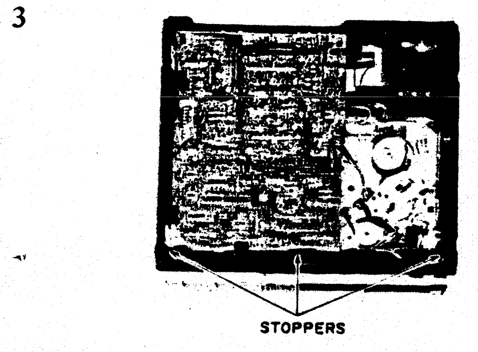
1


UPPER COVER
SCREWS

2


BOTTOM COVER
SCREWS

3



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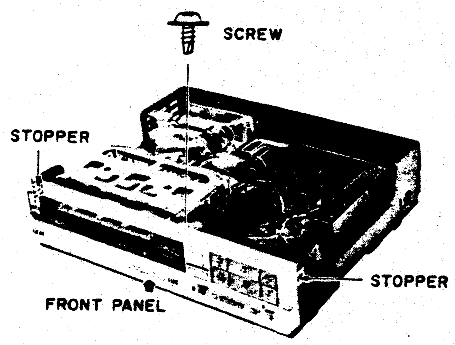
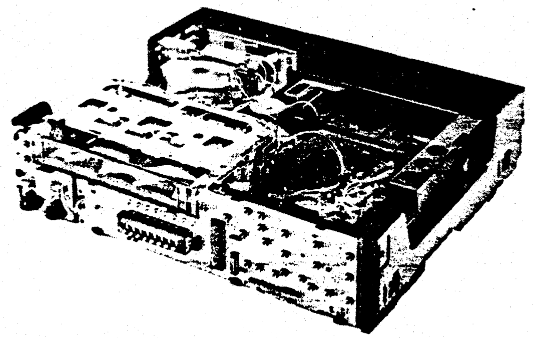
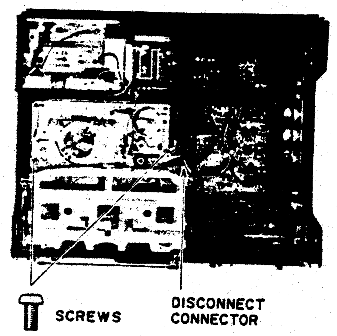

SCREW
STOPPER
STOPPER
FRONT PANEL

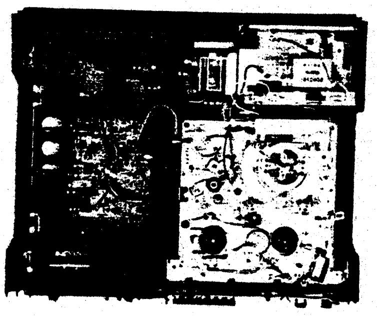
5



6


SCREWS
DISCONNECT CONNECTOR

7



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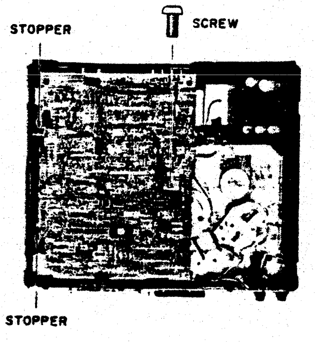
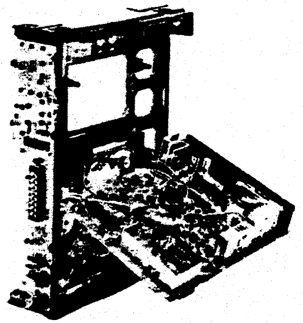

STOPPER
SCREW
STOPPER

9



IV. CONTROLS

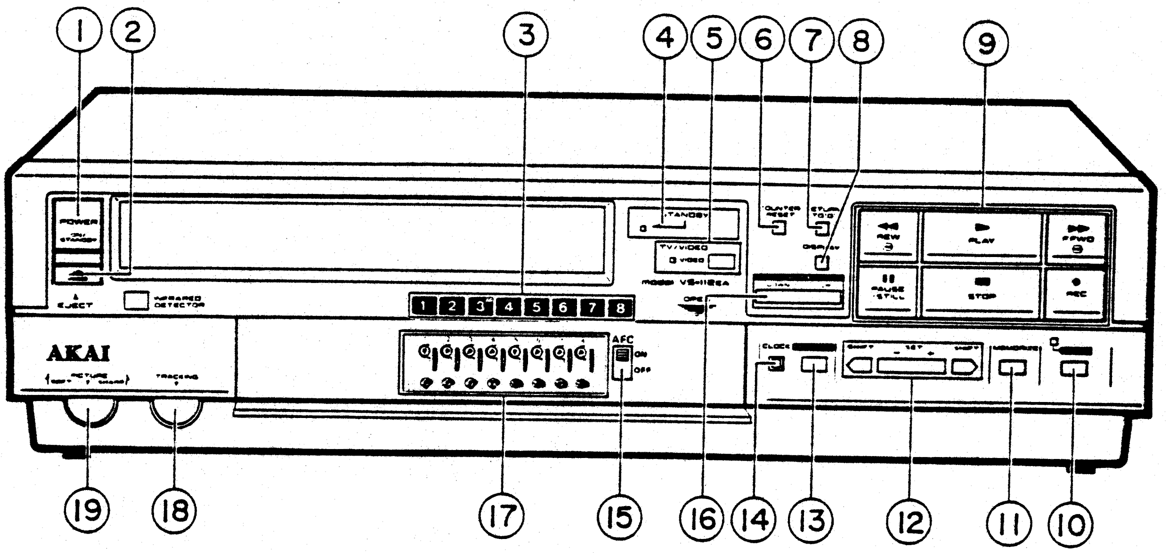

1
2
3
4
5
6
7
8
9
POWER
EJECT
AKAI
AFC
REW
PLAY
FFWD
PAUSE STILL
STOP
REC
1 2 3 4 5 6 7 8
19
18
17
15
16
14
13
12
11
10

Fig. 4-1

1. POWER BUTTON
2. EJECT BUTTON
3. CHANNEL INDICATORS
4. STANDBY INDICATORS
5. TV/VIDEO SELECT BUTTON AND INDICATOR
6. COUNTER RESET BUTTON
7. RETURN TO "0" BUTTON
8. DISPLAY BUTTON
9. TAPE TRANSPORT BUTTON
10. TIMER BUTTON AND INDICATOR
11. MEMORIZE BUTTON
12. SET AND SHIFT BUTTON
13. PROGRAM BUTTON
14. CLOCK BUTTON
15. AFC (AUTOMATIC FREQUENCY CONTROL) BUTTON
16. CHANNEL SELECTOR
17. TUNING CONTROL
18. TRACKING CONTROL
19. SHARP/SOFT PICTURE CONTROL

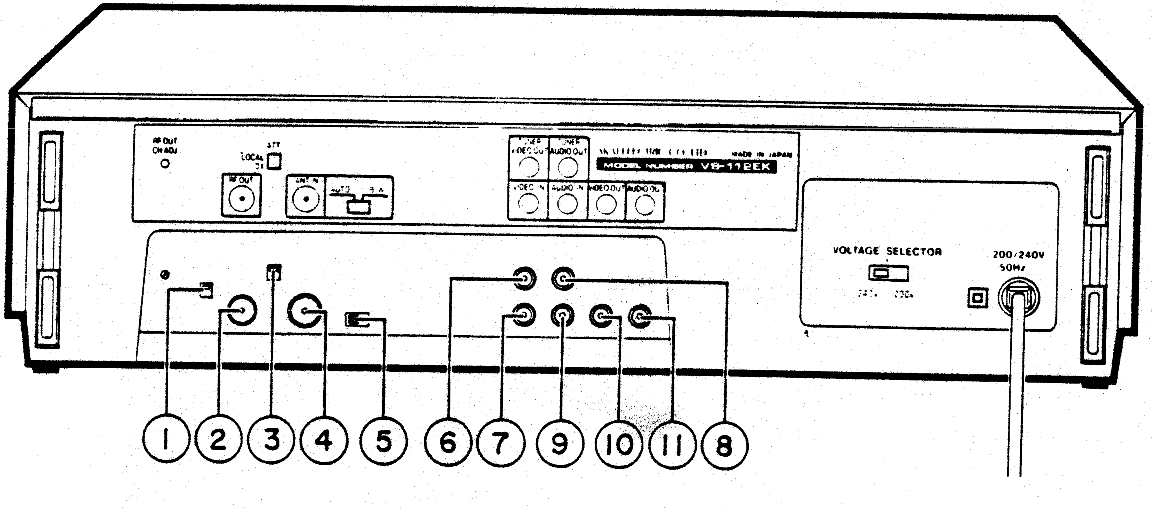

VOLTAGE SELECTOR
200/240V
50Hz
VS-112EK
1
2
3
4
5
6
7
9
10
11
8

Fig. 4-2

1. RF OUT CH SELECTOR SWITCH
2. RF OUT CONNECTOR
3. LOCAL/DX ATTENUATOR SWITCH
4. ANTENNA IN CONNECTOR
5. VIDEO MODE SELECTOR
6. TUNER VIDEO OUT
7. VIDEO IN
8. TUNER AUDIO OUT
9. AUDIO IN
10. VIDEO OUT
11. AUDIO OUT

V. MECHANICAL PARTS LOCATION

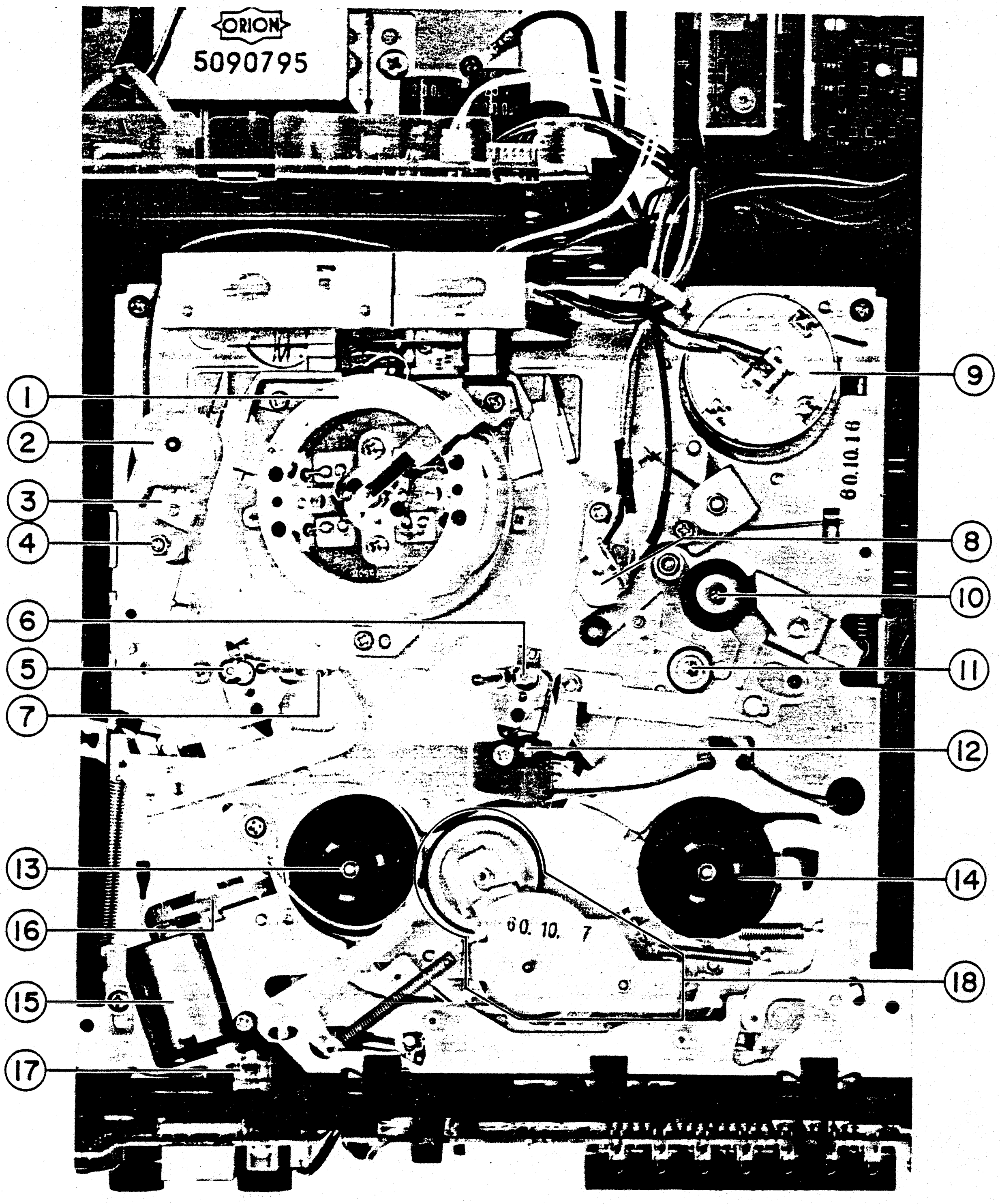

ORION
5090795
60.10.16
60.10. 7
1
2
3
4
6
5
7
13
16
15
17
9
8
10
11
12
14
18

Fig. 5-1

1. HEAD DRUM BLOCK
2. IMPEDANCE ROLLER
3. FULL TRACK ERASE HEAD
4. SUPPLY TAPE GUIDE
5. LOADING LEADER (L)
6. LOADING LEADER (R)
7. TENSION ARM
8. AUDIO/CONTROL HEAD
9. CAPSTAN MOTOR
10. PINCH ROLLER
11. CAPSTAN/FLYWHEEL
12. SENSOR LED
13. SUPPLY REEL TABLE
14. TAKE-UP REEL TABLE
15. LOADING MOTOR
16. SYNCHRO BELT
17. REC SAFETY SWITCH
18. TAKE-UP GEAR BLOCK

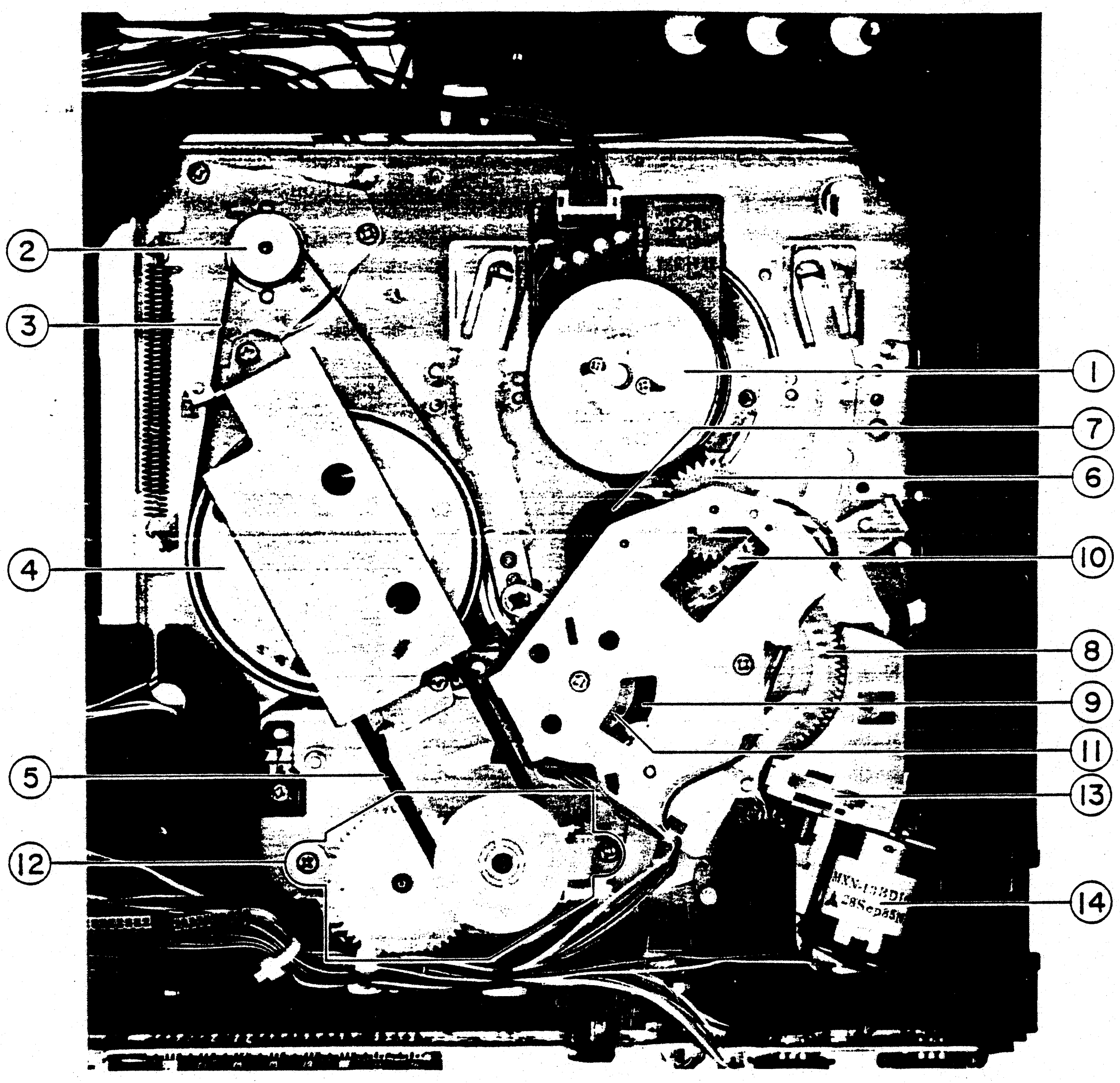


Fig. 5-2

1. DRUM MOTOR
2. CAPSTAN MOTOR
3. CAPSTAN BELT
4. CAPSTAN/FLYWHEEL
5. IDLER BELT
6. SUPPLY LOADING GEAR
7. TAKE-UP LOADING GEAR
8. EJECT CAM GEAR
9. MAIN CAM GEAR
10. EJECT SWITCH
11. ROTARY ENCODER
12. TAKE-UP GEAR BLOCK
13. SYNCHRO BELT
14. LOADING MOTOR

VI. MECHANICAL ADJUSTMENT

6-1. BEFORE THE ADJUSTMENT

The EJECTOR block has to be removed for mechanical adjustments. Consequently the J308 connected with P901 on EJECTOR block has to be disconnected, the unit does not function in this condition, to obtain the normal function without the EJECTOR block is as follows.

1) Disconnect J308 from P901 on the EJECTOR block.
2) Depress the POWER button on the front panel.
3) Connect a short wire pin 3 to pin 5 of J308 as shown Fig. 6-1 (Tape loaded mode).
4) After the adjustments, disconnect a short wire, then depress EJECT button.

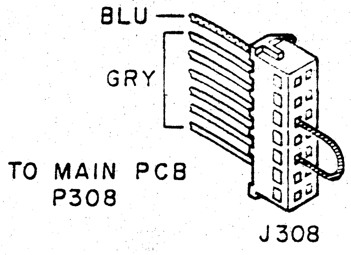

BLU
GRY
TO MAIN PCB
P308
J308

Fig. 6-1 J308 Connector

6-2. BACK TENSION ADJUSTMENT

1) Set the Back Tension Jig (AT-751181) and put some weight on the Back Tension Jig as a stabilizer.

2) Press the PLAY button, then check and adjust the back tension as 30 to 35 g-cm by the TENSION HOLDER position.

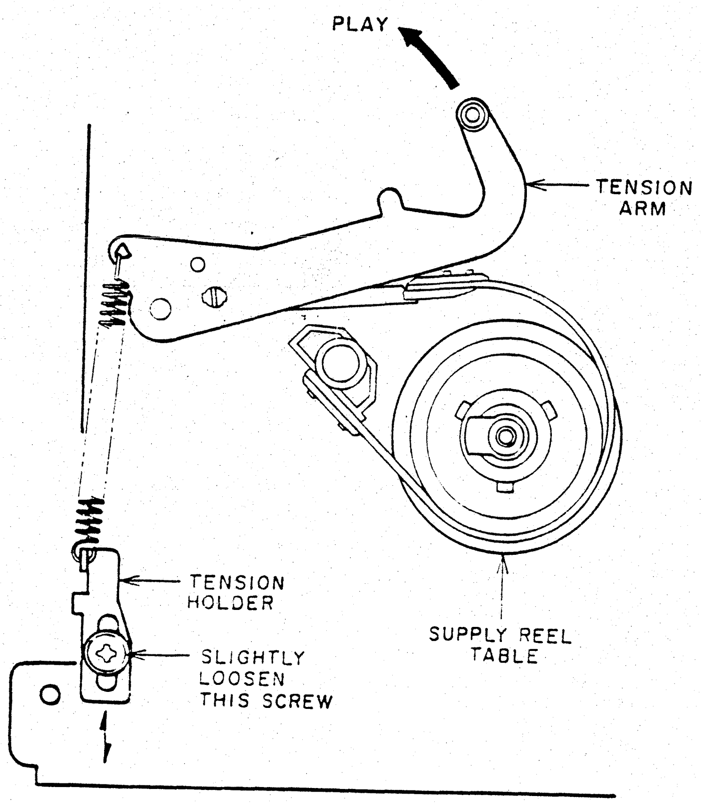

PLAY
TENSION ARM
TENSION HOLDER
SLIGHTLY LOOSEN THIS SCREW
SUPPLY REEL TABLE

Fig. 6-2

6-3. LOADING LEADER HEIGHT ADJUSTMENT

1) Slightly loosen the set screw at the lower part of the LOADING LEADER so that the LOADING LEADER can be adjusted with reasonable tightness. Adjust the coarse height of the LOADING LEADER from the base mount as 0.6 to 0.8 mm.
2) Set the reference tape AT-750795 (TF-508RF) and depress the PLAY button.
3) Connect an oscilloscope to TP3 on the Pre-Amp. P.C Board (RF ENVELOPE), turn the LOADING LEADER height adjustment screw head to obtain the flat evelope as Fig. 6-4 ideal envelope.

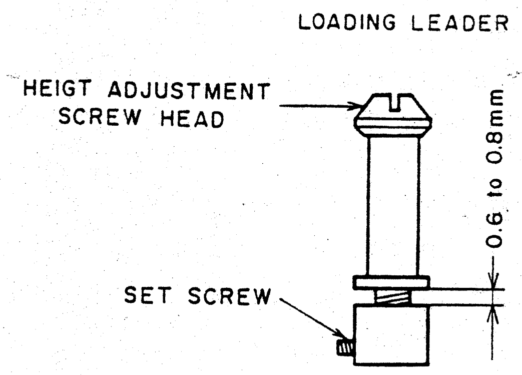

LOADING LEADER
HEIGT ADJUSTMENT SCREW HEAD
SET SCREW
0.6 to 0.8mm

Fig. 6-3

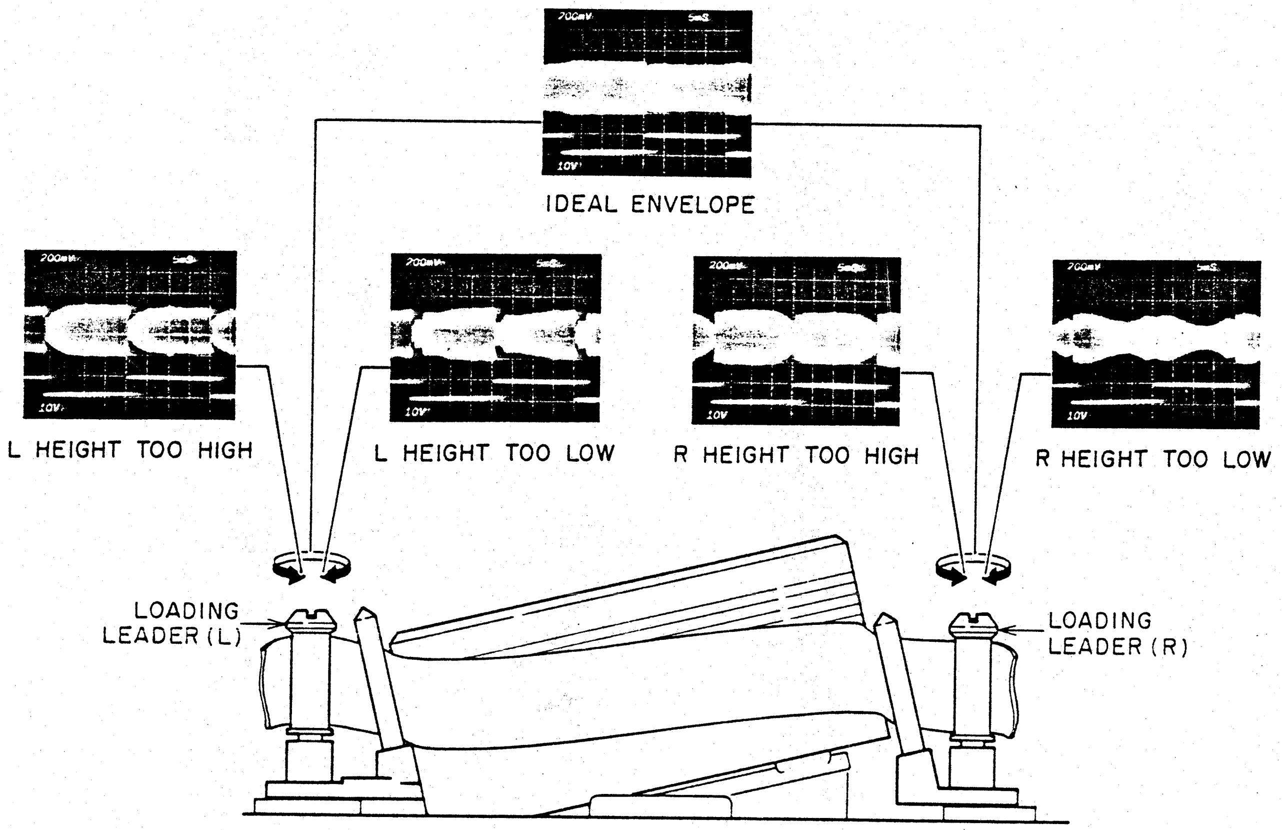

200mV
5mS
10V
IDEAL ENVELOPE
L HEIGHT TOO HIGH
L HEIGHT TOO LOW
R HEIGHT TOO HIGH
R HEIGHT TOO LOW
LOADING LEADER (L)
LOADING LEADER (R)

Fig. 6-4

6-4. TAPE CURL AT TAKE-UP TAPE GUIDE ADJUSTMENT

Turn the screw ⓐ on the AC HEAD BLK so that the down edge of the tape touches the TAKE-UP TAPE GUIDE lower part without any curl or waving.

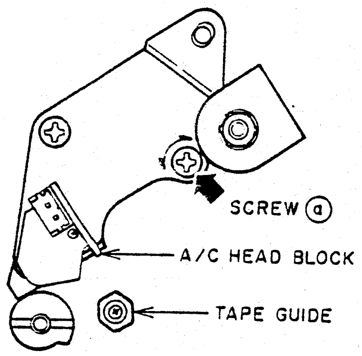
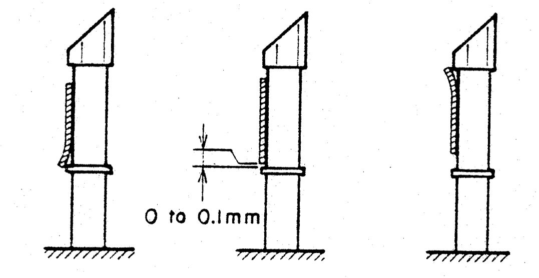

SCREW ⓐ
A/C HEAD BLOCK
TAPE GUIDE

Fig. 6-5



(a) NO GOOD (b) GOOD (c) NO GOOD

Fig. 6-6

6-5. AUDIO HEAD AZIMUTH ADJUSTMENT

1) Turn the NUT ⓐ for coarse AC BLOCK height adjustment as in Fig. 6-7, 8.

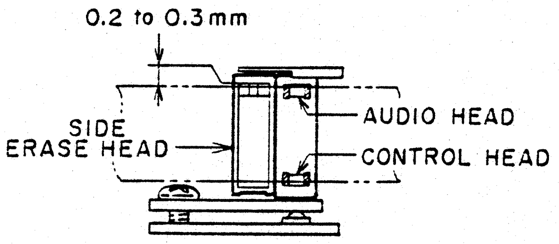

0.2 to 0.3mm
SIDE ERASE HEAD
AUDIO HEAD
CONTROL HEAD

Fig. 6-7

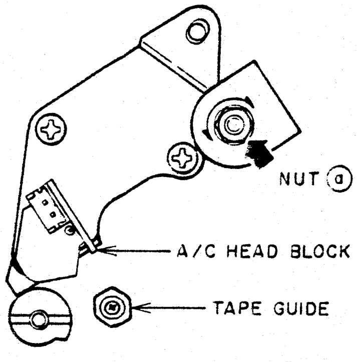

NUT ⓐ
A/C HEAD BLOCK
TAPE GUIDE

Fig. 6-8

2) Connect an oscilloscope or a AC voltmeter to the AUDIO LINE OUT.

3) Set the reference tape AT-750795 (TF-508RF) and depress the PLAY button.

4) Turn the screw ⓑ to obtain the maximum audio signal output.

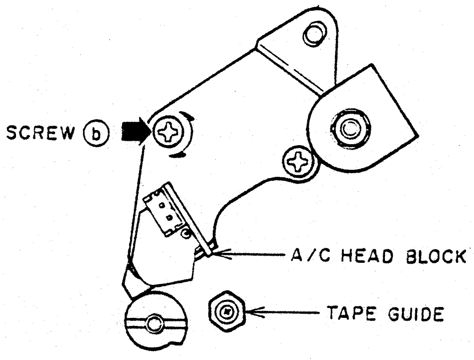

SCREW ⓑ
A/C HEAD BLOCK
TAPE GUIDE

Fig. 6-9

6-6. RF ENVELOPE ADJUSTMENT

1) Set the reference tape AT-750795 (TF-508RF) and depress the PLAY button.

2) Slightly turn the LOADING LEADER HEIGHT ADJUSTMENT SCREW HEAD (L) (R) to obtain the IDEAL ENVELOPE as shown in Fig. 6-4.

6-7. TAPE CURL AT SUPPLY TAPE GUIDE ADJUSTMENT

1) Check the tape curl at Supply Tape Guide slightly turn the NUT ⓐ if the tape curl exists.

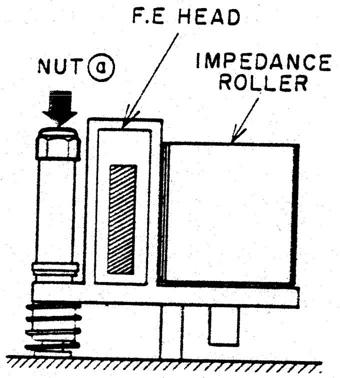

F.E HEAD
NUT ⓐ
IMPEDANCE ROLLER

Fig. 6-10

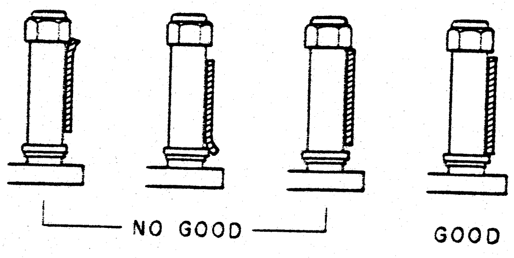

NO GOOD
GOOD

Fig. 6-11

6-8. AUDIO HEAD HEIGHT ADJUSTMENT

1) Connect an oscilloscope or a AC Voltmeter to the LINE AUDIO OUT.
2) Set the reference tape AT-750795 (TF-508RF) and depress the PLAY button.
3) Slightly turn the NUT ⓐ shown in Fig. 6-8 to obtain the maximum audio output.

6-9. CONTROL HEAD POSITION ADJUSTMENT

1) Connect an oscilloscope to the TP3 on the Pre-Amp. P.C Board (RF ENVELOPE).
2) Set the reference tape AT-750795 (TF-508RF) and depress the PLAY button.
3) Set the Tracking Control Volume to center click position.
4) Adjust Mechanical Tracking Adjustment Screw ⓐ to obtain the maximum RF ENVELOPE.

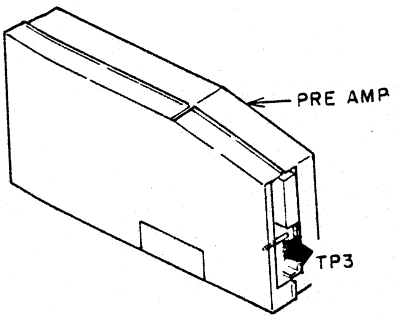


Fig. 6-12

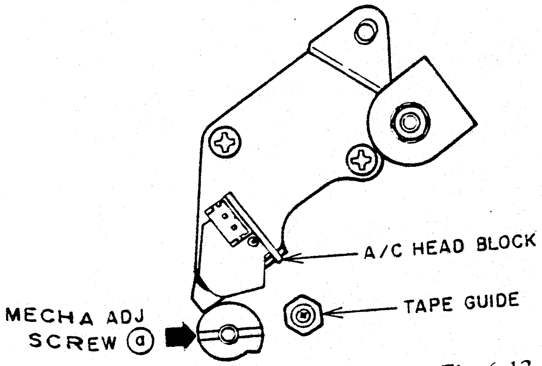

A/C HEAD BLOCK
TAPE GUIDE
MECHA ADJ
SCREW ⓐ

Fig. 6-13

6-10. CUE/REVIEW ADJUSTMENT

1) Set a E-180 tape, press the PLAY and the button (CUE mode).
2) Turn the CUE/REVIEW GUIDE height adju Nut ⓒ so that the wrinkle between the ROLLER and the CUE/REVIEW GUIDE a existed.
3) Depress the REV button (REVIEW mode) co the curl at the tape down edge is not existed a TAPE GUIDE as shown in Fig. 6-6. (Fig. 6-6 (c) is not acceptable, but Fig. 6-6 (b acceptable)

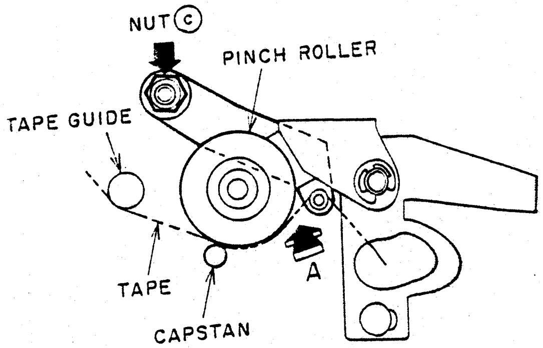

NUT ⓒ
PINCH ROLLER
TAPE GUIDE
TAPE
CAPSTAN
A

Fig. 6-14

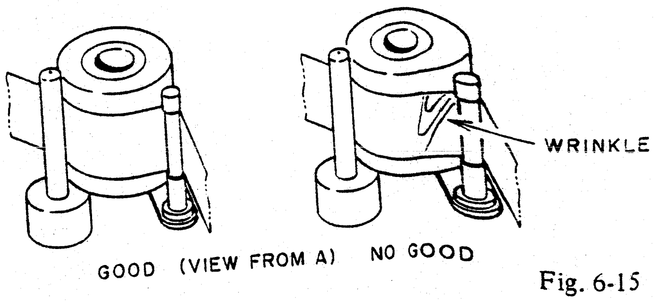

WRINKLE
GOOD (VIEW FROM A) NO GOOD

Fig. 6-15

After the adjustments, tighten the LOADING LEADER set screw.

VII. HEAD DRUM REPLACEMENT

7-1. REPLACEMENT PROCEDURE

1) Remove the Drum Eath Brush.
2) Unsolder the four wires from the Rotary Trans. BLUE, BROWN for CH1 and BLUE, RED for CH2.
3) Remove the Upper Drum Fixing Screw.
4) Install the Upper Drum. (Head Drum)
5) Tighten the Upper Drum Fixing Screws.
6) Resolder the four wires from the Rotary trans.

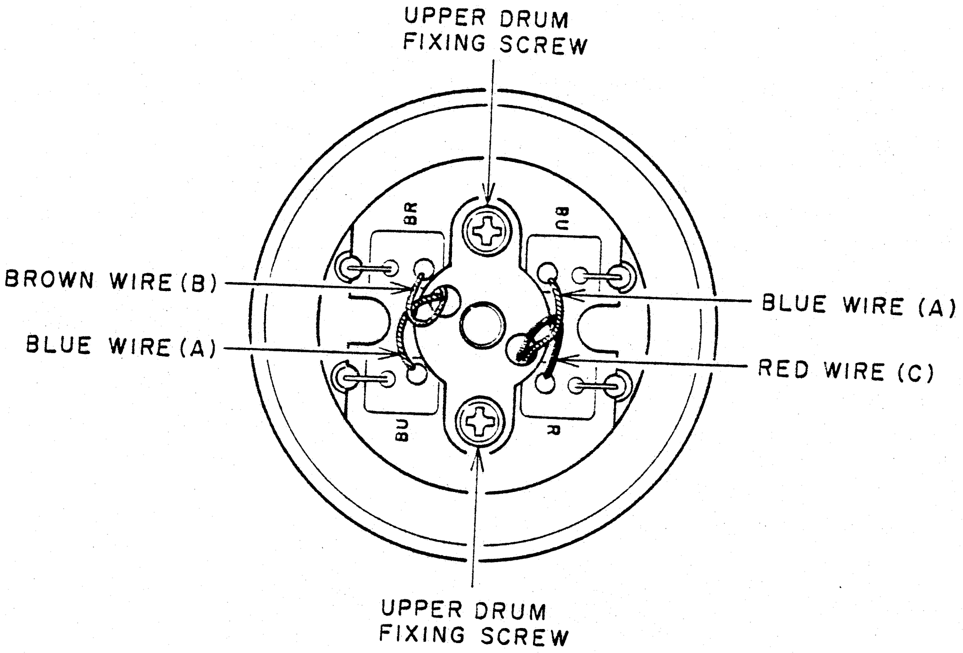


Fig. 7-1

NOTE: Height precisior is required for the proper performance, and the head tips are fragile, so the bollowing points should be noted when replacing the upper drum block.

(a) Before fixing, clean both surfaces where the upper drum and the rotary transformer part meet, with pure alcohol.

(b) When installation of upper drum, if it does not go on to the shaft easily, clean the hole in the upper drum with pure alcohol and put a little oil on the shaft.

(c) Make sure that the upper drum fixing screw holes on the rotary transformer part and the upper drum fixing screw penetration holes match exactly before inserting the fixing screws.

(d) Tighten the two upper drum fixing screws alternately and gradually. Tighten them at 6 kg-cm torque.

(e) Do not loosen the set screw on the collar preload.

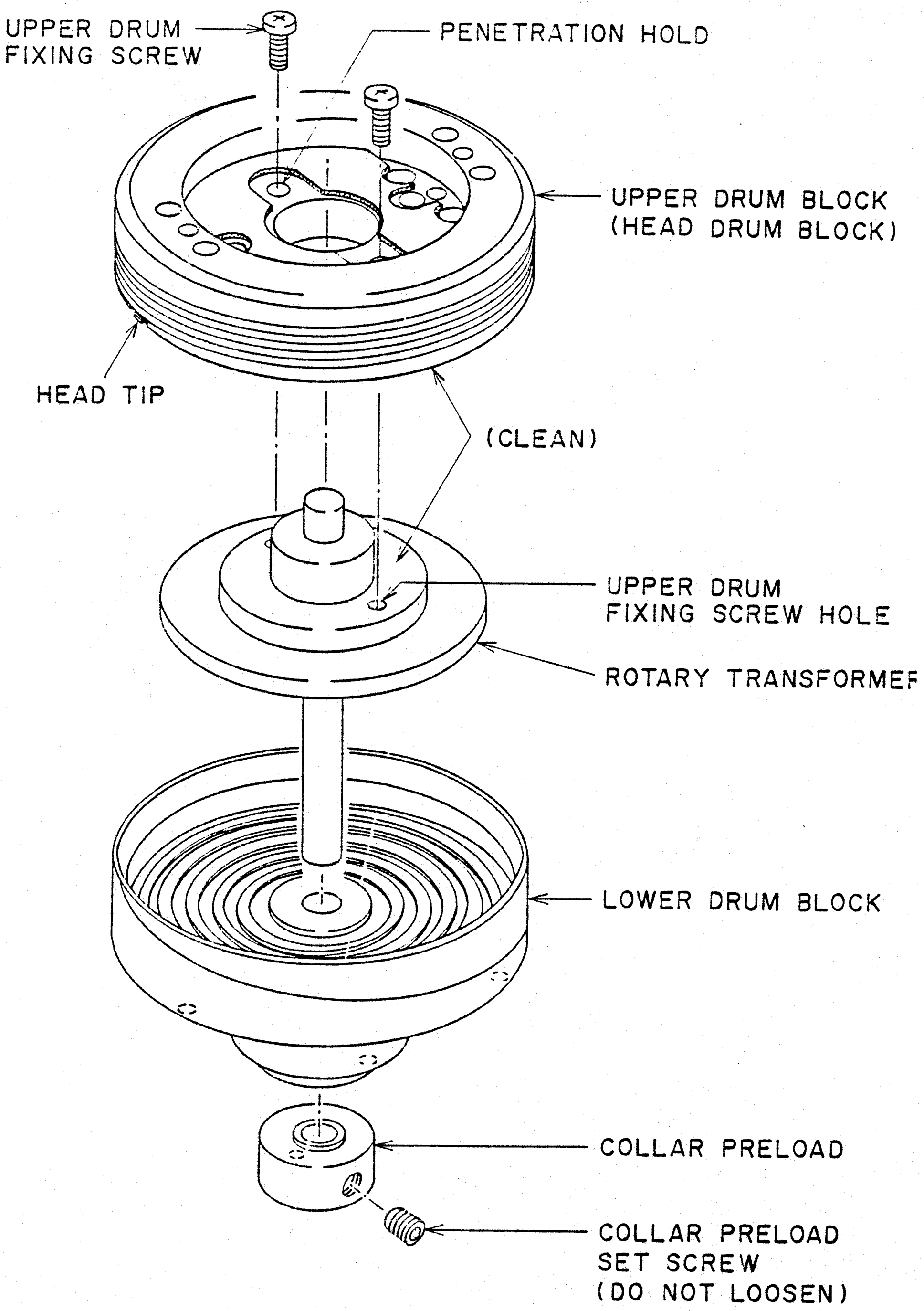

UPPER DRUM FIXING SCREW
PENETRATION HOLD
UPPER DRUM BLOCK (HEAD DRUM BLOCK)
HEAD TIP
(CLEAN)
UPPER DRUM FIXING SCREW HOLE
ROTARY TRANSFORMER
LOWER DRUM BLOCK
COLLAR PRELOAD
COLLAR PRELOAD SET SCREW (DO NOT LOOSEN)

Fig. 7-2

7-2. AFTER REPLACEMENT

After replacement, the following adjustments and confirmations are necessary for the proper performance.

1) Tracking preset adjustment. (Servo adjustment Step 1)
2) PB switching point adjustment. (Servo adjustment Step 2)
3) REC current adjustment. (Video adjustment)

VIII. HOW TO MOUNT THE ROTARY PLATE

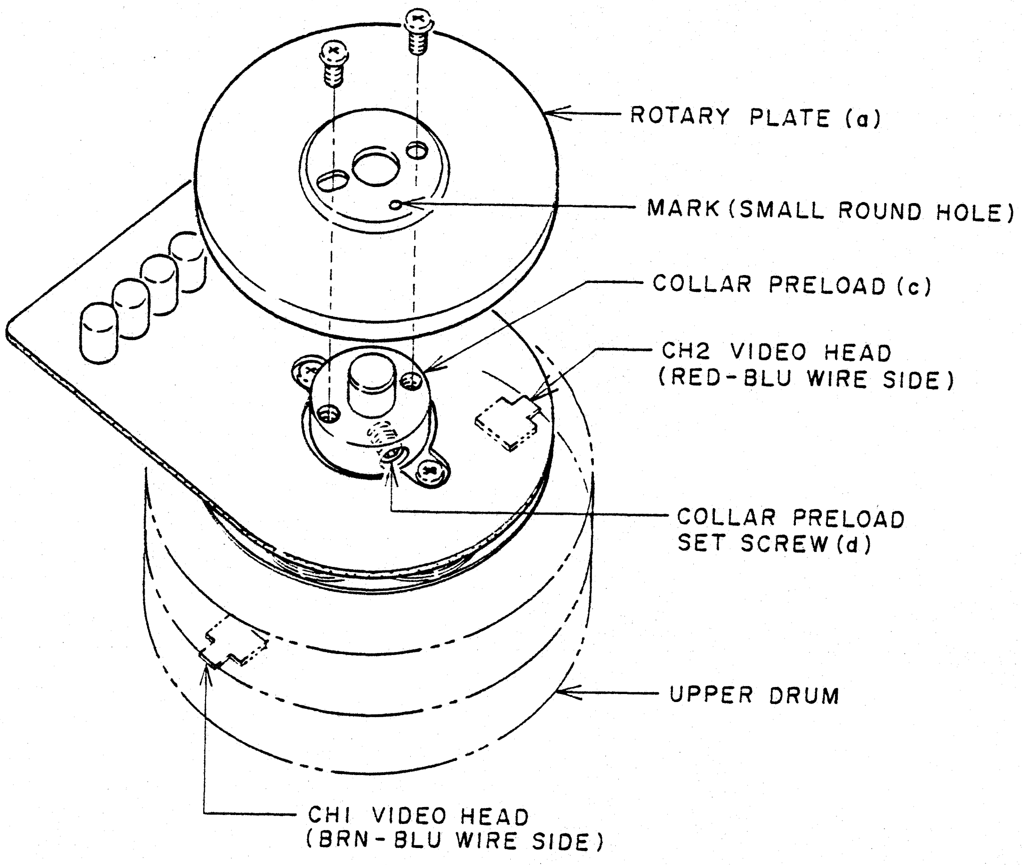

ROTARY PLATE (a)
MARK (SMALL ROUND HOLE)
COLLAR PRELOAD (c)
CH2 VIDEO HEAD (RED-BLU WIRE SIDE)
COLLAR PRELOAD SET SCREW (d)
UPPER DRUM
CH1 VIDEO HEAD (BRN-BLU WIRE SIDE)

Fig. 8-1 How to Mount the Rotary Plate

When mounting the rotary plate on the drum motor, be sure to align the mark (Small round hole) on the rotary plate (a) with the collar preload set screw (d) on the collar preload (c) as illustrated above.

NOTE: Do not attempt to remove the collar preload (c) on the head assy. If removed, a special jig is needed for reinstallation, which almost always requires replacement of the drum assy.

IX. HOW TO ASSEMBLE LOADING MECHANISM

1) With the unit unloaded, attach Gear Loading (S) BLK and Gear Loading (T) BLK to Mecha chassis so that align the mark.

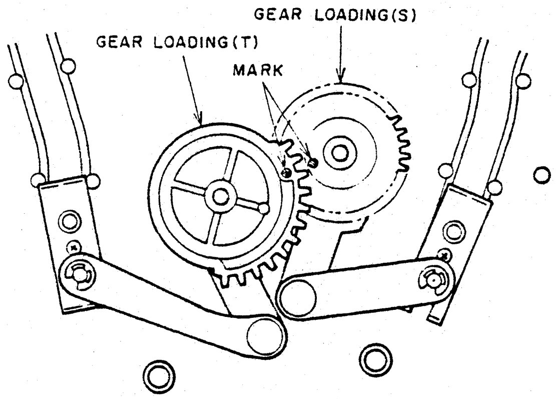

GEAR LOADING(S)
GEAR LOADING(T)
MARK

Fig. 9-1

2) Attach Gear Cam Eject to Mecha chassis so that Pin Ⓐ of Lever Eject Cam mates oval hole of Gear Cam Eject.

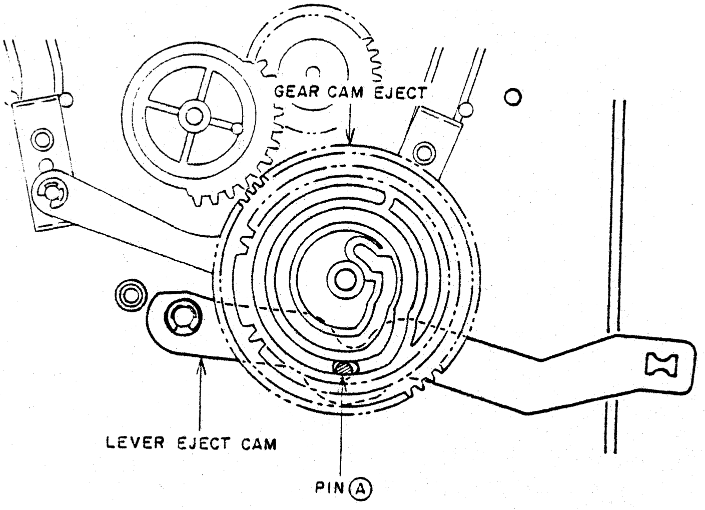

GEAR CAM EJECT
LEVER EJECT CAM
PIN Ⓐ

Fig. 9-2

3) Attach Gear Cam Main to Mecha chassis so that Pin Ⓐ of Lever P Cam and Pin Ⓑ of Lever Cam Slide mate oval hole of Gear Cam Main.

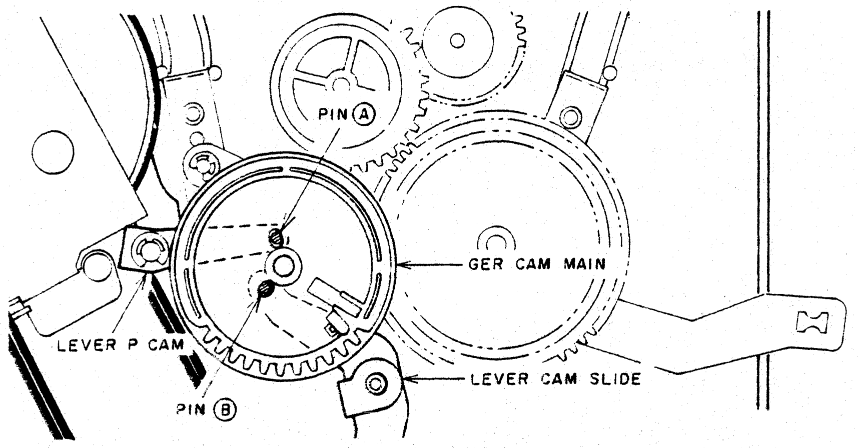

PIN Ⓐ
GER CAM MAIN
LEVER P CAM
LEVER CAM SLIDE
PIN Ⓑ

Fig. 9-3

4) Attach Lever Cam Tension to Mecha chassis so that Pin Ⓐ goes into valley of Gear Cam Eject.
5) Attach Lever Cam Free to Mecha chassis so that Pin Ⓑ goes into valley of Gear Cam Eject.

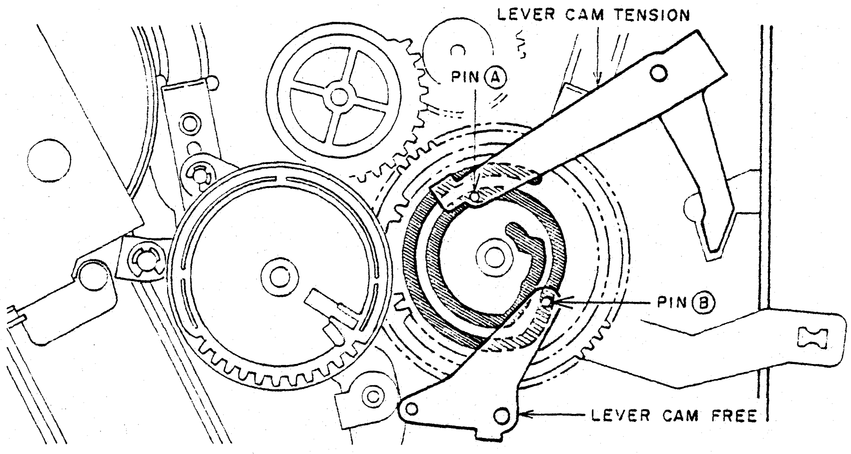

LEVER CAM TENSION
PIN Ⓐ
PIN Ⓑ
LEVER CAM FREE

Fig. 9-4

6) Attach Arm Set Free onto Lever Cam Slide.
7) Attach Spring Torsion Gear Loading.

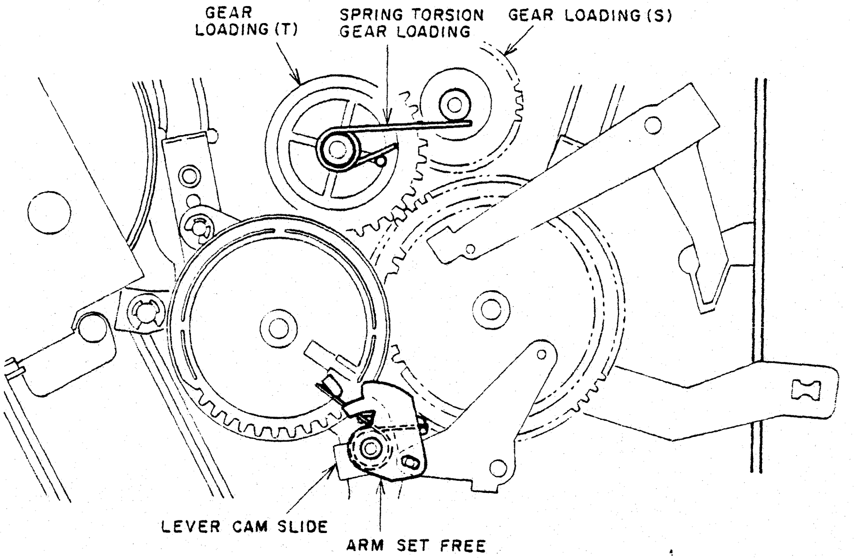

GEAR LOADING (T)
SPRING TORSION GEAR LOADING
GEAR LOADING (S)
LEVER CAM SLIDE
ARM SET FREE

Fig. 9-5

8) Attach Mode SW BLK to Mecha chassis so that the latch of Rotary Encoder goes into slit Ⓐ of Gear Cam Main and tighten with screw Ⓑ.

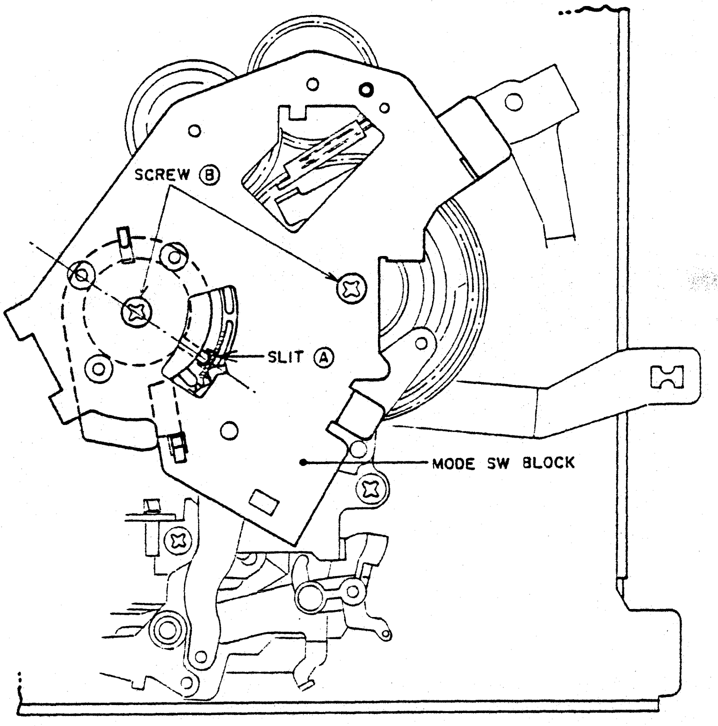

SCREW Ⓑ
SLIT Ⓐ
MODE SW BLOCK

Fig. 9-6

9) Mount Loading Motor BLK and tighten with screw Ⓐ.

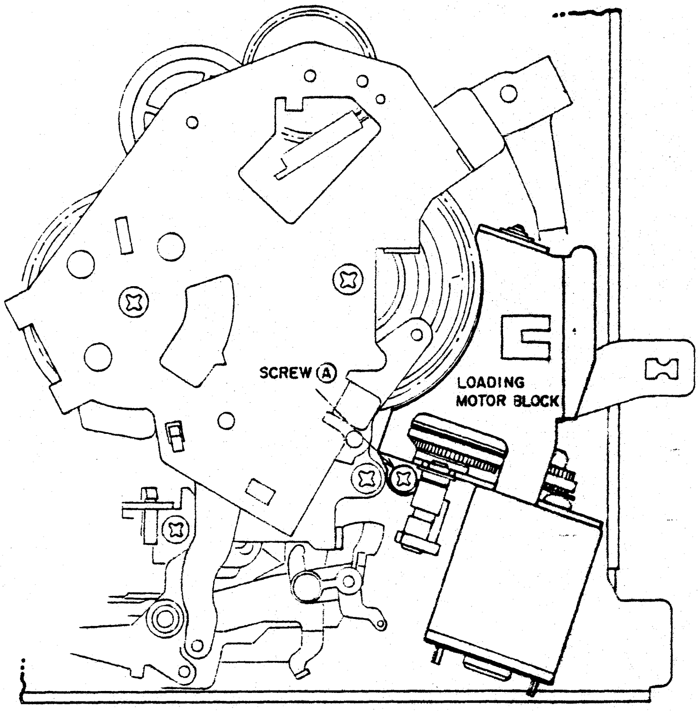

SCREW Ⓐ
LOADING
MOTOR BLOCK

Fig. 9-7

X. ELECTRICAL ADJUSTMENT

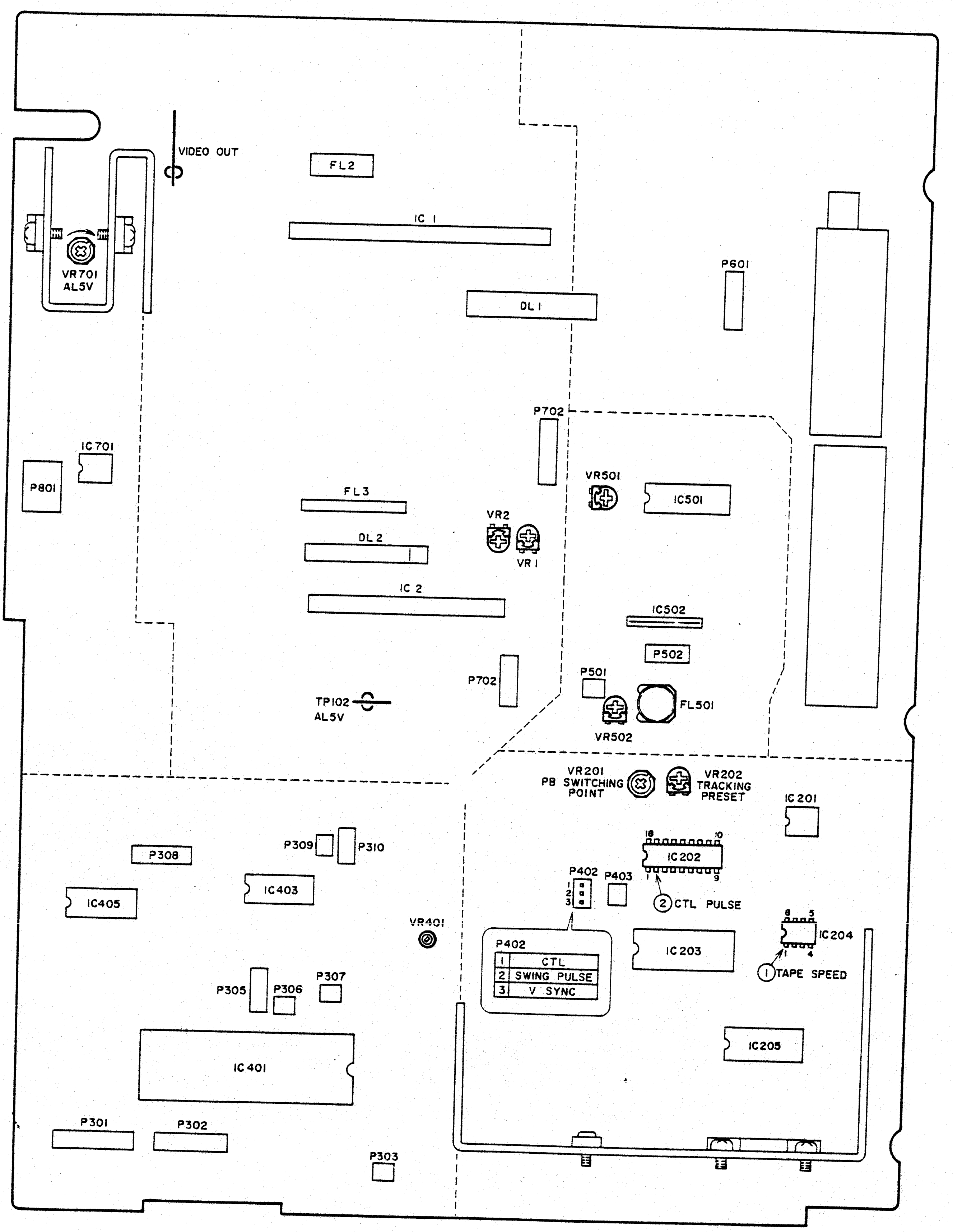
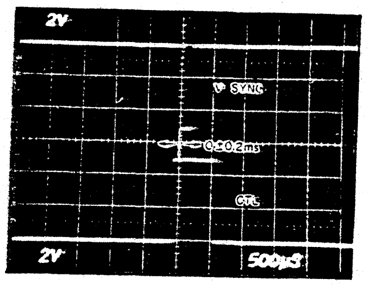
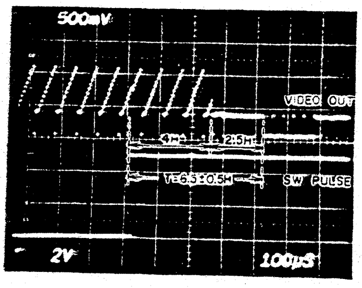

VIDEO OUT
FL2
IC 1
VR701
AL5V
P601
DL 1
P702
IC701
P801
VR501
IC501
FL3
VR2
DL 2
VR 1
IC 2
IC502
P502
P702
P501
TP102
AL5V
FL501
VR502
VR201
PB SWITCHING
POINT
VR202
TRACKING
PRESET
IC 201
18
10
IC 202
1
9
P309
P310
P308
P402
P403
1
2
3
IC403
IC405
② CTL PULSE
8
5
IC204
1
4
VR401
P402
1 CTL
2 SWING PULSE
3 V SYNC
IC 203
① TAPE SPEED
P307
P305
P306
IC205
IC 401
P301
P302
P303

Fig. 10-1 Main PCB

10-1. POWER SUPPLY ADJUSTMENT

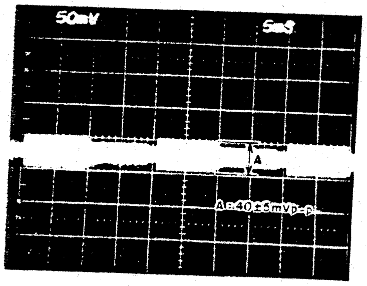
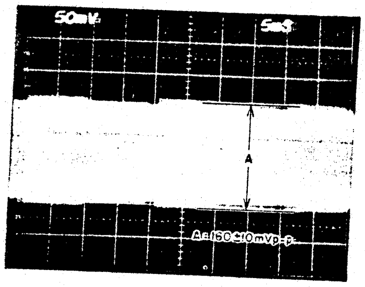
Step	Adjustment Item	Input Signal or tast tape	Mode	Test Point	Adjustment Parts	Result & Remarks
1	AL 5V		E-E	TP102	VR701	5.1 ± 0.2V

10-2. SERVO ADJUSTMENT

Step	Adjustment Item	Input Signal or tast tape	Mode	Test Point	Adjustment Parts	Result & Remarks
1	Tracking Preset	PAL/SECAM Reference Test Tape AT-750795 (TF-508RF)	PB	P402 ③ (V SYNC) IC202 ② (CTL)	VR202	Set the Tracking control volume to center click position.  Adjust VR202 so that the phase at raising part of CTL pulse and V SYNC pulse are lined up.
2	PB Switching Point	PAL/SECAM Reference Test Tape AT-750795 (TF-508RF)	PB	VIDEO OUT P402 ②	VR201	 Adjust T1 with VR201 to 6.5 ± 0.5H.
3	STILL TRACKING (V. ADJ)	PAL/SECAM Reference Test Tape AT-750797 (TF-510CB)	PB PAUSE/ STILL	Monitor TV	VR401	Adjust VR401 only in the unsuccessful case that even after adjusted the STILL TRACKING (V. ADJ) on the bottom cover. Adjust VR401 so that the noise band is located within the 1/3 portion from the bottom of the TV screen.

10-3. VIDEO ADJUSTMENT

Precautionary items prior to adjustments
1. The color bar generator output should be 1.0 Vp-p.
2. Video output terminal should be terminated with 75 ohms (dummy or load).

Step	Adjustment Item	Input Signal or tast tape	Mode	Test Point	Adjustment Parts	Result & Remarks
1	REC CURRENT	PAL Color Bar from Color Bar Generator	REC	TP2	VR2 (Chroma) VR1 (Y)	1. Turn VR1 fully counter-clockwise (Y-zero)  2. Adjust VR2 so that the chroma REC waveform is 40 ± 5 mVp-p as shown above.  3. Adjust VR1 so that the Y REC Current waveform is 160 ± 10 mVp-p as shown above.

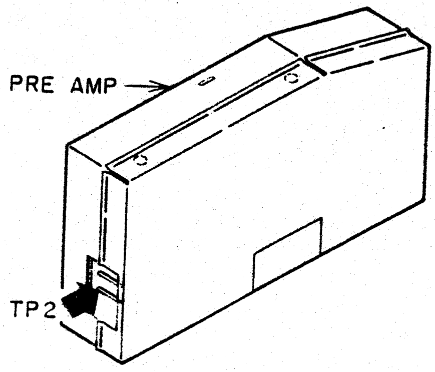


Fig. 10-2

10-4. IMS ADJUSTMENT

Step	Adjustment Item	Input Signal or tast tape	Mode	Test Point	Adjustment Parts	Result & Remarks
1	Charactor Position	PAL Color Bar from Color Bar Generator	E-E	MONITOR TV	VR1	1. Depress the Display button to choose a Counter. 2. Depress the Counter Reset button. 3. Adjustment VR1 so that the right side of the "0" (first "0" from the right) is located on the boarder line between Cyan and Green as shown in Fig. 10-4.

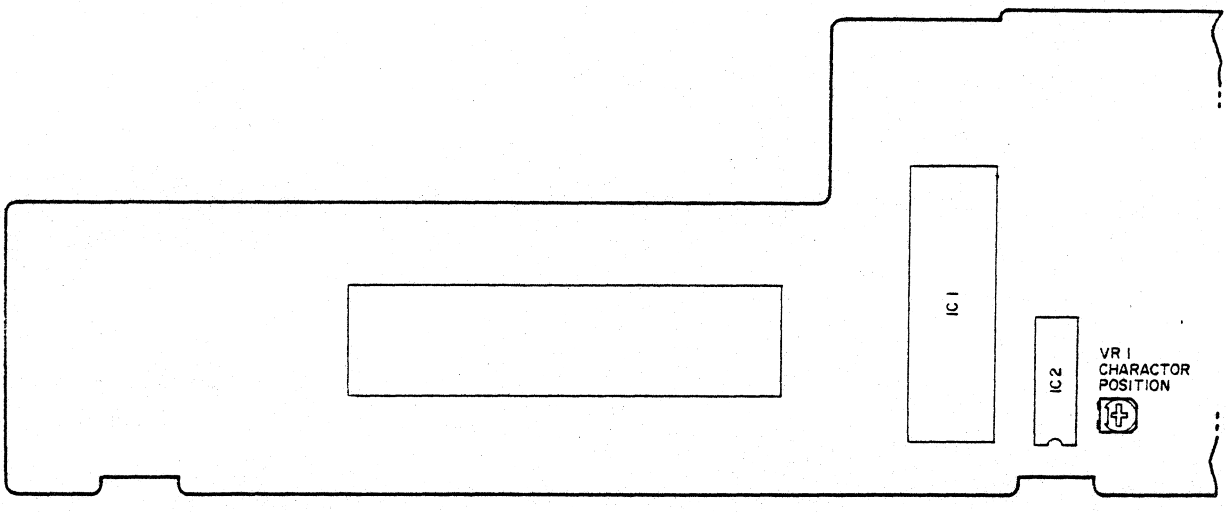

IC 1
IC 2
VR I
CHARACTOR
POSITION

Fig. 10-3

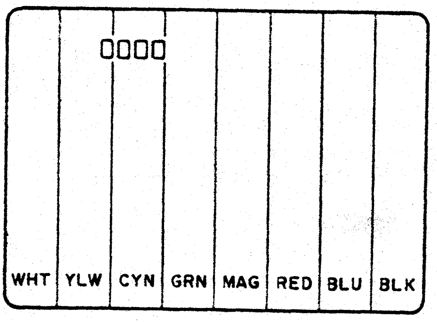

0000
WHT
YLW
CYN
GRN
MAG
RED
BLU
BLK

Fig. 10-4

10-5. AUDIO ADJUSTMENT

Step	Adjustment Item	Input Signal or tast tape	Mode	Test Point	Adjustment Parts	Result & Remarks
1	PB Level	PAL Audio Level Test Tape AT-751776 (TF-513L)	PB	Audio	VR501	-9.0 ± 0.5 dBm
2	Tape Speed	PAL Reference Test Tape AT-750775 (TF-508RF)	PB	IC204 ①	Confirmation	445 ± 2Hz
3	Audio Head Azimuth	PAL 6 kHz Reference Test Tape AT-750795 (TF-508RF)	PB	Audio Output	Confirmation	-9.0^{+2}_{-4} dBm
4	Bias Current	Audio 1kHz, −8dBm input	REC	A/C Head Test Terminal (Ref. to Fig. 10-5)	VR502	Connect an AC voltmeter to A/C Head Test Terminal (Ref. to Fig. 10-5) Adjust VR502 so that the meter reads 280 ± 10 mV (RMS)

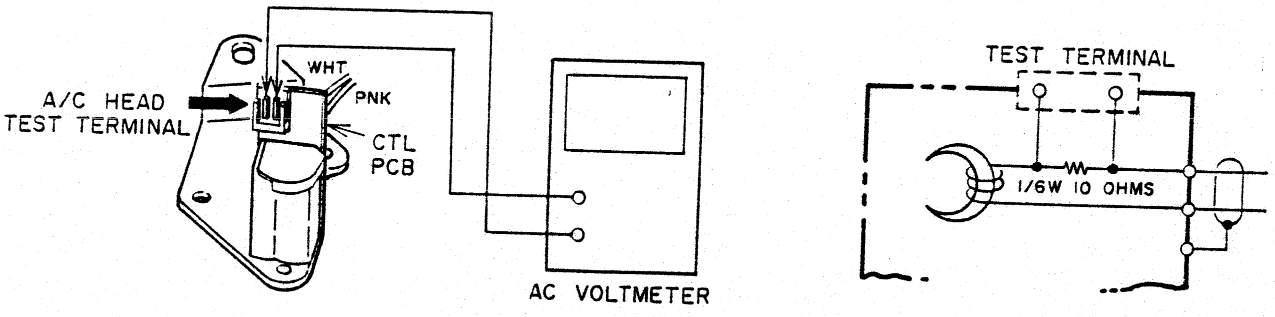

A/C HEAD
TEST TERMINAL
WHT
PNK
CTL
PCB
AC VOLTMETER
TEST TERMINAL
1/6W 10 OHMS

Fig. 10-5

XI. PC BOARD TITLES AND IDENTIFICATION NUMBERS

PC Board Title		PC Board Number	Remark
MAIN	PC Board	V1047D5010	
OPERATION	PC Board	V1047A5020	
FUNCTION	PC Board	V1047B5040	
PRE-AMP	PC Board	V1047B5050 (2ED)	
POWER	PC Board	V1047C5030 (3ED)	
EVM	PC Board	V1047C5060	EV-M, EK, ES, EG
SENSOR LED	PC Board	V1047D5100	
SENSOR REEL	PC Board	V1047D5110	
SENSOR (R)	PC Board	V1047D5130	
SENSOR (L)	PC Board	V1047D5140	
A/C HEAD	PC Board	V1047D5150	
F.E HEAD	PC Board	V1047D5160	
HEAD SUB	PC Board	V1047D5170	
SWITCH EJECT	PC Board	V1030D5190	
HEAD	PC Board	V1027D5010	

ATTENTION

1. When placing an order for parts, be sure to list Part No., Model No. and the description of each part. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.
2. Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.
3. Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

2. HEAD BASE BLOCK

REF. NO.	PART NO.	DESCRIPTION
2-1x	BH-T2023A320A	HEAD BASE BLOCK
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20×03STL CMT
2-4	ZS-536488	BID20×08STL CMT
2-5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification

A small "x" indicates that this part is not shown in the Photo or Illustration.

This number corresponds with the individual parts index number in that figure.

This number corresponds with the Figure Number.

b) PC Board

6. MAIN PC BOARD

REF. NO.	PART NO.	DESCRIPTION
6-IC1	EI-324536	IC HD14049BP
6-IC2	EI-336801	IC MB8841-564M
6-C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
6-C1B	EC-350949	C MMY V 223M 250DC [J]
6-C1C	EC-338397	C MMY V 223M 125AC [C,A]
6-X1	EI-318384	OSC X'TAL NC-18C

Symbols for primary destination

[A]: AAL(U.S.A.)	[S]: SAA(Australia)
[B]: BEAB(England)	[U]: U/T(Universal Area)
[C]: CSA(Canada)	[V]: VDE(W. Germany)
[E]: CEE(Europe)	[Y]: Custom Version
[J]: JPN(Japan)	

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No. listed at right of Part No.

WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS

AVERTISSEMENT

⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT

RECOMMENDED SPARE PARTS LIST

Because, if the parts listed below are on hand almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

NO.		PART NO.	DESCRIPTION
1	N	BF-B360531-B	FLYWHEEL CAPSTAN PART
2	N	BL-B360350	ARM TENSION BAND PART
3	N	BM-361544-A	CAPSTAN MOTOR MRX PAL
4	N	BM-B361467	LOADING MOTOR PART
5	N	BM-M3223A020A	PC MOTOR BLK SM-230 (DRUM MOTOR)
6	N	BR-B360517B	SUPPLY REEL PART
7	N	BR-B360517A	TAKE-UP REEL PART
8	N	BT-362244	⚠ TRANS POWER V47EA [EA]
9	N	BT-363353	⚠ TRANS POWER V47EG [EG]
10	N	BT-363945	⚠ TRANS POWER V47EK [EK]
11	N	BT-363948	⚠ TRANS POWER V47EO [ED,EO,EO-G]
12	N	BT-363949	⚠ TRANS POWER V47ES [ES]
13	N	BT-363946	⚠ TRANS POWER V47EV-M [EV-M]
14	N	BT-363950	⚠ TRANS POWER V47EZ [EZ]
15		BV-V1030A210B	LOWER DRUM BLK VS-303
16	N	BV-363232-A	RF CONVERTER BOOSTER EK [EK,ES]
17	N	BV-363231-A	RF CONVERTER BOOSTER EO [EG,EO,EO-G]
18		BV-363943	RF CONVERTER SW ED [ED]
19	N	BV-363234	RF CONVERTER SW MDLC2D093A EV [EV-M,EZ]
20		BV-V1030A220D	UPPER DRUM BLK VS-303EG
21	N	ED-363351	⚠ D SILICON DSA17C
22	N	ED-363350	⚠ D SILICON S5566B
23		ED-356424	D LED BG5525S GREEN
24		ED-357540	D LED LN59
25		ED-355607	D LED PR 5505S RED
26	N	ED-360409	D PHOT PN323B
27		ED-357754	D SILICON DS135D 200/1.0A
28		ED-344280	D SILICON H GMA-01-FY2 F05
29		ED-624903	D SILICON H 1S2473
30		ED-624903	D SILICON H 1S2473
30	N	ED-362998	D ZENER H HZS9.1J F05 B3
31		ED-313846	D ZENER H HZ16 3
32		ED-329051	D ZENER H HZ24 3 [EV-M]
33		ED-305706	D ZENER H HZ7 B3
34		ED-337266	D ZENER H HZ 9 A1
35		ED-346609	D ZENER H HZ9 C1
36	N	ED-365109	D ZENER H MA1043-H
37	N	EE-366792	TV TUNER TEEE1-A39A [EO-G]
38	N	EE-360406	TUNING UNIT UBH02 8CH 203 [EG,ES,EV-M]
39	N	EE-364669	TUNING UNIT UBH020513A EA 8CH203 [EA,ED,FZ)
40	N	EE-360405	TUNING UNIT UBH050028A 14CH 203 [EO,EO-G]
41	N	EE-360407	TUNING UNIT UBH14 8CH 203 [EK]
42	N	EE-363214	TV TUNER A25A [EO]
43	N	EE-366760	TV TUNER ES [ES]
44		EE-345116	TV TUNER TEEB1-013A [EK]
45		EE-345115	TV TUNER TEED1-A04A [EG,EV-M)
46		EE-345117	TV TUNER TEES1-017A [EA]
47		EE-352284	TV TUNER TEEZ1-020A [EZ]
48	N	EE-363941	TV TUNER TEEZ1-042A ED [ED]
49		EF-355226	⚠ FUSE BET T 1.00A 250V [EK]
50		EF-355398	⚠ FUSE BET T 2.00A 250V [EK]
51		EF-344106	⚠ FUSE ICP-N10 150V 0.4A
52		EF-623103	⚠ FUSE SEMKO T 1.00A 250V [EXCEPT EK]
53		EF-601301	⚠ FUSE SEMKO T 2.00A 250V [EXCEPT EK]
54	N	EH-360340	DL EFD-EN645A31P
55	N	EH-360341	DL EFD-HR124A13D
56	N	EH-360339	FILTER LC AP AF-25P [EXCEPT EK,ED]
57	N	EH-364045	FILTER LC FF-78P
58	N	EH-360337	FILTER LC LP LF-47P
59	N	EI-360561	IC AN3792
60	N	EI-360563	IC AN3794
61	N	EI-360334	IC AW2619
62	N	EI-360648	IC BA5115
63		EI-353421	IC BA6229
64	N	EI-360333	IC EHM-M96A8U67K
65		EI-352714	IC HA11752
66		EI-356238	IC LA6324
67		EI-347116	IC LA6538
68	N	EI-363951	IC LA7210 [EO-G]
69		EI-356370	IC LA7224
70	N	EI-364135	IC MB88501-395M R-OPE3 CUSTOM
71	N	EI-364136	IC MB88521-135M R-SYS4 CUSTOM
72	N	EI-360560	IC MN6178ZAL
73	N	EI-360565	IC M5223P
74	N	EI-360404	IC M5450-011P
75	N	EI-360564	IC M54548L
76	N	EI-360396	IC S-8054HN
78	N	EI-363347	IC TC9018P
79		EI-358506	IC μPC1513HA
80		EI-337530	IC μPC574J
81		EI-347991	OSC CE CSA6.00MS 6MHZ
82	N	EI-363952	OSC CE CSB500E5 [EO-G]
83	N	EI-363362	OSC X'TAL MX-44 4.433619MHZ
84		EI-356371	OSC X'TAL MS-309 4.194304MHZ
85	N	EL-363355	PL CORD 12.0V 75MA 200/200
86	N	EO-360647	COIL OSC 1 MX-102
87		EO-356372	COIL TUN 1 038-332 38KHZ
88		ER-348272	⚠ R FUSE ERD2FC S10 1/4W 12R0G
89		ER-200595	⚠ R FUSE ERD2FC S10 1/4W 5R6J
90	N	ER-362257	⚠ R FUSE ERQ-12H F17 1/2W R47K
91	N	ER-364508	⚠ R FUSE ERQ-12H F17 1/2W R56K
92	N	ER-365157	⚠ R FUSE H F10 ERQ-14LE 1/4W R43K
93		ES-354430	⚠ SW SLIDE 00220950 02-02-2N [EG,EK,EV-M,ES]
94	N	ES-360433	SW LEAF MRX
95	N	ES-361479	SW LEAF MSW-1594C
96		ES-353622-A	SW PUSH EVQ-WU7001 02-2
97	N	ES-360408	SW SLIDE ESD-14187 1-01-02N
98		ES-349474	SW TACT SKHHAM004A
99	N	ET-361463	PHOT SENSOR ON2170 Q,R
100	N	ET-363953	TR DTA114TS
101	N	ET-360646	TR DTA143ES F05
102		ET-354415	TR DTA144ES
103		ET-353897	TR DTC114ES
104		ET-354365	TR DTC114YS
105		ET-354371	TR DTC124ES
106		ET-354414	TR DTC144ES
107		ET-356236	TR FET 2SK363 GR.BL
108	N	ET-361490	TR PHOT PN268 R,S
109	N	ET-360401	TR UN4116
110	N	ET-364040	TR UN421D
111	N	ET-360400	TR UN4210
112	N	ET-361729	TR UN4217
113		ET-308472	TR 2SA1115 E,F,G F05
114	N	ET-364093	TR 2SA1283 E,F F05
115		ET-356234	TR 2SA1286 G,H,J F05
116		ET-322598	TR 2SB632K E,F
117		ET-321644	TR 2SC1213 C
118		ET-308141	TR 2SC2603 G F05
119		ET-355669	TR 2SC3246 G,H,J F05
120	N	ET-364153	TR 2SC3246 J,K F05
121		ET-350795	TR 2SC3399 F05
122		ET-347961	TR 2SD1012-V G F05
123		ET-363359	TR 2SD1406 GR
124	N	EV-363511	R S-FIX EVTK-4CA00BQ4 3P 473
125		EV-356322	R S-FIX H KVSF637A 3P 502
126		EV-356575	R S-FIX H RH0615CJ3J 3P 222
127		EV-356582	R S-FIX H RH0615CS4J 3P 473
128		EV-356579	R S-FIX H RH0615C13J 3P 102
129		EV-356577	R S-FIX H RH0615C14J 3P 103
130		EV-337957	R S-FIX H TM64K3 3P 0.30W 102
131		EV-337945	R S-FIX H TM64K3 3P 0.30W 104
132	N	EV-360410	VR ROTARY K091C0G0C 103
133		EV-360569	VR ROTARY K091C0G0C 104
134	N	EX-361672	DEW SENSOR MRX
135	N	EZ-362247	⚠ CIRCUIT PROTECTOR TBC6211-21-0442 [EV-M]
136		HE-361456	HEAD E HVFMD0005A
137	N	HR-361454	HEAD COMBO HVMLA1004B
138	N	MB-364011	BELT
139	N	MB-360534	BELT IDLER
140	N	MB-360533	BELT PAL
141	N	MP-361543	PINCH ROLLER PART
142	N	MR-364010	PULLEY WORM
143	N	MZ-360385	GEAR LOADING (T)
144	N	MZ-361314	GEAR (1)
145	N	MZ-360640	GEAR (2)
146	N	MZ-361313	GEAR (3)
147	N	MZ-360639	GEAR (4)
148	N	MZ-360638	GEAR (5)
149	N	MZ-360428	GEAR CAM EJECT
150	N	MZ-360429	GEAR CAM MAIN
151	N	MZ-B360642	GEAR EJECT PART
152	N	MZ-360384	GEAR LOADING (S)
153	N	MZ-364041	GEAR TU BLK
154	N	MZ-360453	WORM
155	N	VT-363354	ROTARY ENCORDER D2EQ-R9
156		VT-360148	VERTICAL POLE PART

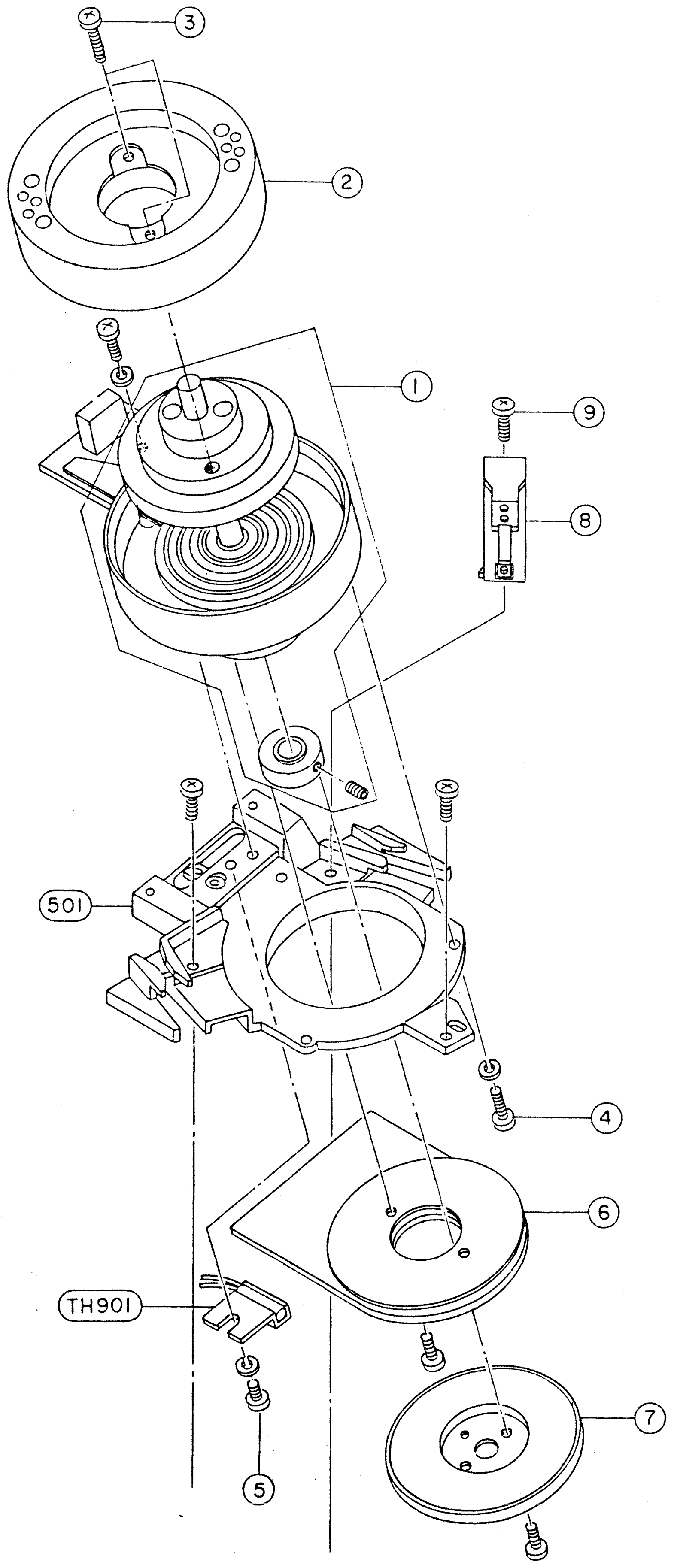
"NOTE" N: New Parts

1. HEAD DRUM BLOCK

REF. NO.	PART NO.	DESCRIPTION
	HEAD DRUM BLOCK	
1-1	BV-V1030A210B	LOWER DRUM BLK VS-303
1-2	BV-V1030A220D	UPPER DRUM BLK VS-303EG
1-3	ZS-362241	BID30x09STL CMT [UPPER DRUM FIX]
1-4	ZS-354332	PAN26x08STL CMT SW [LOWER DRUM FIX]
1-5	ZS-432843	PAN26x04STL CMT
1-TH901	EX-361672	DEW SENSOR MRX
	MOTOR SM-230 BLOCK	
1-6	BM-M3223A020A	PC MOTOR BLK SM-230 (DRUM MOTOR)
1-7	BV-B362443	YOKE MAGNET (2) PART
	ASSEMBLY BLOCK	
1-8	VT-361452	DRUM EARTH SP ASSY (A)
1-9	ZS-421806	PAN30x08STL CMT [1–8 FIX]

NOTE: Parts listed in 1-1 to 1-9 on the exploded view and list are normaly stocked for replacement purpose.
The remaining parts shown in this manual are not normaly stocked, because they are seldom required for routine service.

HEAD DRUM BLOCK



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MODEL VS-205EK

SCHEMATIC DIAGRAM AND PC BOARDS

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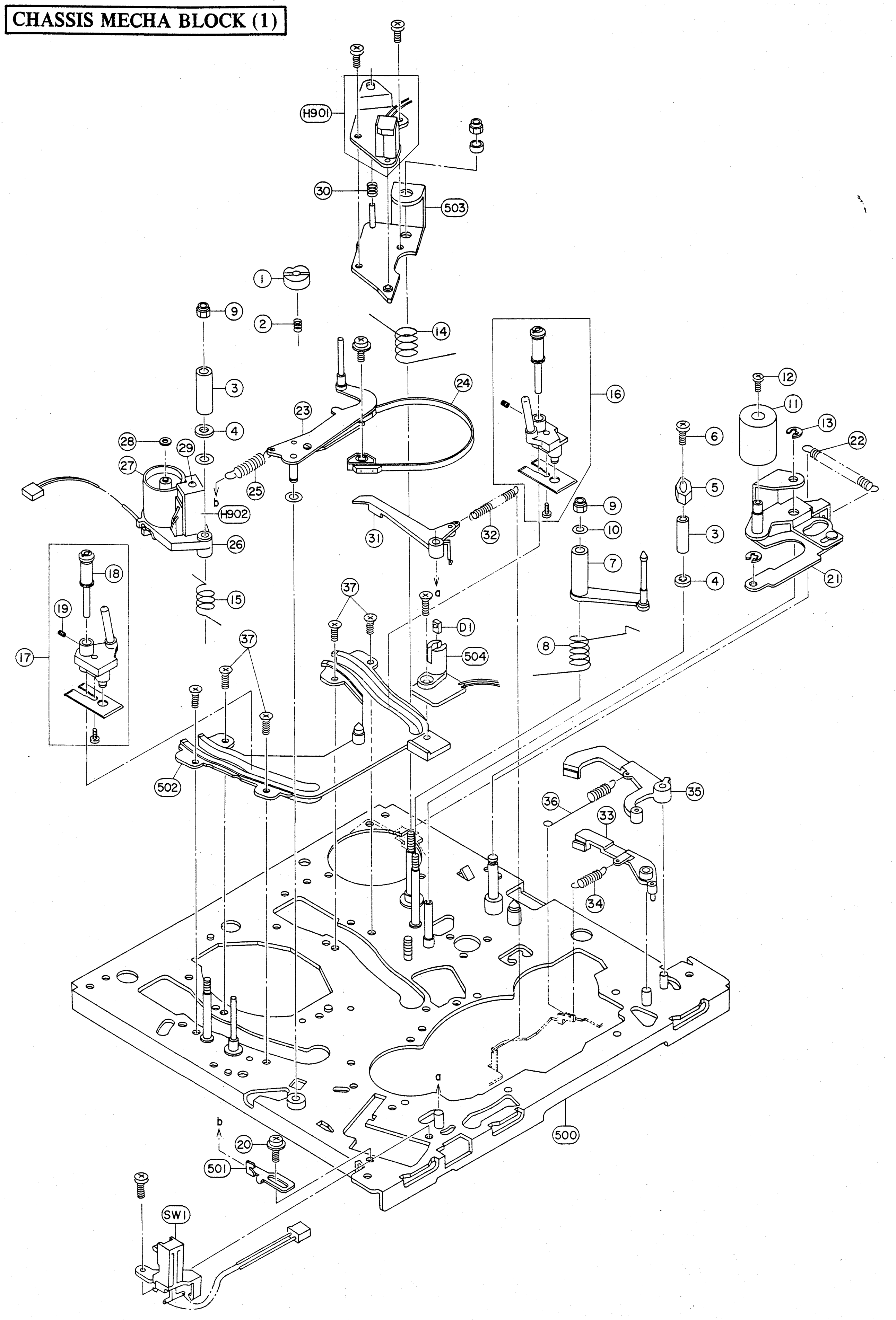
CHASSIS MECHA BLOCK (1)



2. CHASSIS MECHA BLOCK (1)

REF. NO.	PART NO.	DESCRIPTION
	CHASSIS MECHA BLOCK	
2-1	ZS-360372	SCREW ADJUST
2-2	ZG-363349	SP PUSH ADJUST SCREW
2-3	MS-364796	GUIDE TAPE (3)
2-4	MS-364797	GUIDE TAPE (4)
2-5	MS-362181	GUIDE TAPE TU
2-6	ZS-608095	PAN20x05STL CMT
2-7	BL-B360353	LEVER REVIEW PART
2-8	ZG-360605	SP TORSION REVIEW ARM
2-9	ZW-350839	N30 NYLON
2-10	ZW-354859	PW31x070x100PSL
2-11	MP-361543	PINCH ROLLER PART
2-12	ZS-477876	PAN20x03STL CMT
2-13	ZW-270101	RING E 300SUP CMT
2-14	ZG-360603	SP TORSION A/C HEAD
2-15	ZG-360604	SP TORSION HOLDER FE HEAD
2-16	BV-V1047A080A	LOADING LEADER (R) BLK VS-112EG
2-17	BV-V1047A090A	LOADING LEADER (L) BLK VS-112EG
2-18	VT-360148	VERTICAL POLE PART
2-19	ZS-321729	6SET20x040SCM PKR WP
2-20	ZS-200655	SCREW TRIPLE PAN30x04
2-21	BL-B360361	ARM PINCH ROLLER PART
2-22	ZG-360602	SP PULL PINCH
2-23	BL-B360342	LEVER TENSION PART
2-24	BL-B360350	ARM TENSION BAND PART
2-25	ZG-321731	SP T2-04.0/0.40-25.0 T2-115
2-26	MZ-B362281	HOLDER FE HEAD (2) PART
2-27	MR-364335	ROLLER IMPEDANCE
2-28	ZW-361458	PUSH WASHER 16x032x025PSL
2-29	ZS-460440	PAN20x04STL CMT
2-30	ZG-313258	SP C-03.5/0.80-10.0 C-102
2-31	BL-B360486	LEVER FF BRAKE PART
2-32	ZG-364338	SP PULL FF BRAKE
2-33	BL-B360525	LEVER SUB BRAKE (R) PART
2-34	ZG-364339	SP PULL REW BRAKE
2-35	BL-B360522	LEVER BRAKE REVIEW PART
2-36	ZG-364337	SP PULL REVIEW BRAKE
2-37	ZS-360391	SCREW SPECIAL
2-H901	HR-361454	HEAD COMBO HVMLA1004B
2-H902	HE-361456	HEAD E HVFMD0005A
2-SW1	ES-360433	SW LEAF MRX
2-D1	ED-357540	D LED LN59

NOTE: Parts listed in 2-1 to 2-D1 on the exploded view and list are normaly stocked for replacement purpose.
The remaining parts shown in this manual are not normaly stocked, because they are seldom required for routine service.

SECTION 2

PARTS LIST

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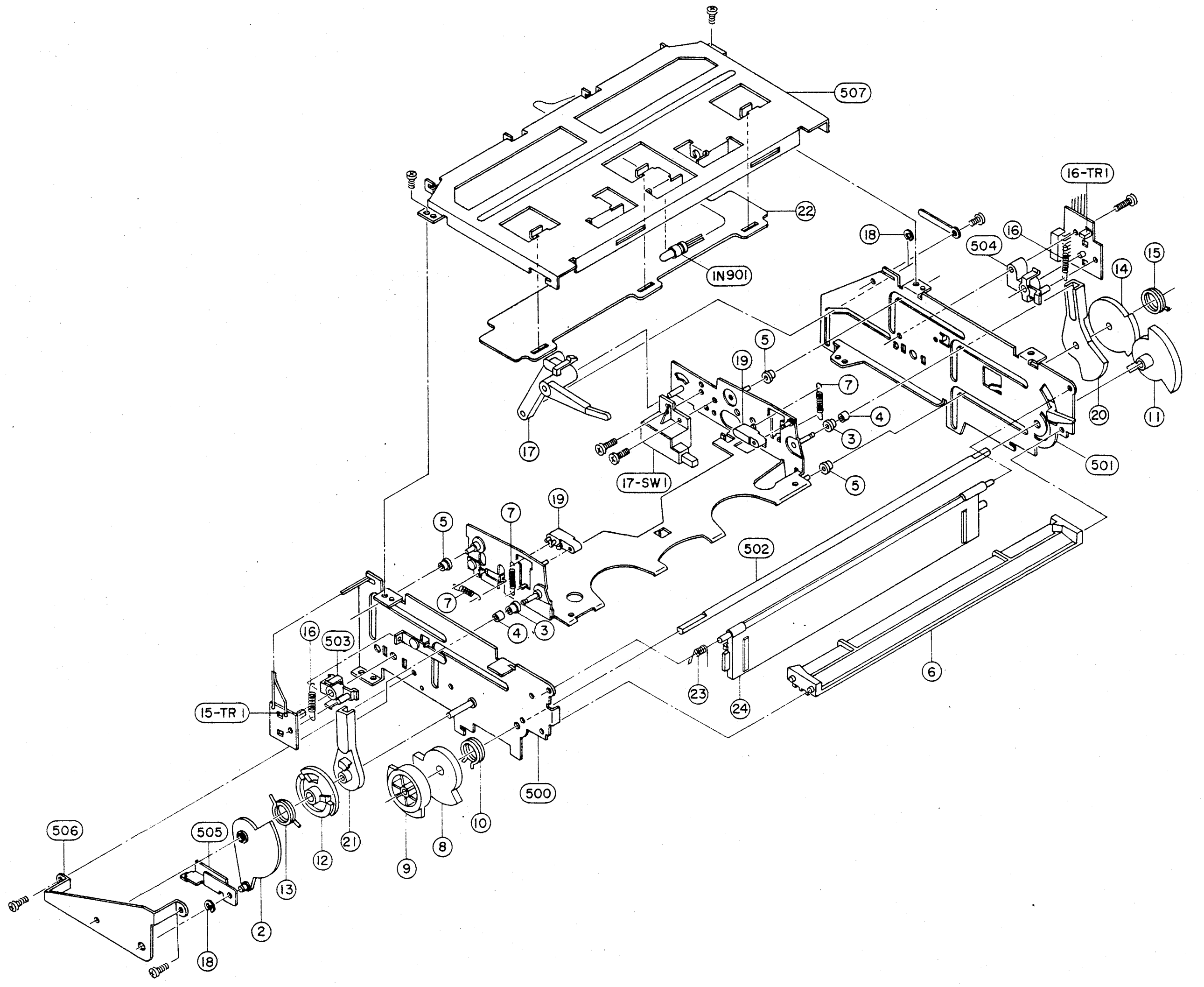
EJECTOR BLOCK



4. EJECTOR BLOCK

REF. NO.	PART NO.	DESCRIPTION
	EJECTOR BLOCK	
4-1	BV-V1047A250A	EJECTOR BLK VS-112EG
4-2	MZ-B360642	GEAR EJECT PART
4-3	MR-361310	ROLLER (1)
4-4	MR-361311	ROLLER (2)
4-5	MR-361312	ROLLER (3)
4-6	SZ-360607	GUIDE
4-7	ZG-357865	SP T5-04.0/0.40-11.2 T5-108
4-8	MZ-361314	GEAR (1)
4-9	MZ-361313	GEAR (3)
4-10	ZG-360615	SP TORSION (EJ)
4-11	MZ-360640	GEAR (2)
4-12	MZ-360639	GEAR (4)
4-13	ZG-360614	SP TORSION (L)
4-14	MZ-360638	GEAR (5)
4-15	ZG-360613	SP TORSION (R)
4-16	ZG-358212	SP T5-06.3/0.50-16.0 T5-180
4-17	BL-B361308	ARM LID OPENER PART
4-18	ZW-357164	RING E 230SUP CMT
4-19	ML-361316	ARM PRESSING
4-20	ML-360634	ARM LOADING (R)
4-21	ML-360635	ARM LOADING (L)
4-IN901	EL-363355	PL CORD 12.0V 75MA 200/200
	ASSEMBLY BLOCK	
4-22	SP-364666	PLATE MIRROR (2)

REF. NO.	PART NO.	DESCRIPTION
4-23	ZG-360616	SP TORSION
4-24	SE-361317	MASK CASSETTE
	SENSOR (L) PC BOARD	
15-TR1	ET-361490	TR PHOT PN268 R,S
	SENSOR (R) PC BOARD	
16-TR1	ET-361490	TR PHOT PN268 R,S
	SWITCH (EJ) PC BOARD	
17-SW1	ES-353622	SW PUSH EVQ-WU7001 02-2

NOTE: EJECTOR BLOCK consists of 15-TR1, 16-TR1, and 17-SW1.

NOTE: Parts listed in 4-1 to 17-SW1 on the exploded view and list are normaly stocked for replacement purpose.
The remaining parts shown in this manual are not normaly stocked, because they are seldom required for routine service.

5. PC BOARD BLOCK (VS-112, VS-105)

REF. NO.	PART NO.	DESCRIPTION
5-1A	BA-V1047A300A	PC MAIN BLK VS-112EG
5-1B	BA-V1047A300B	PC MAIN BLK VS-112EK [VS-112EK, VS-105EK]
5-1C	BA-V1047A300C	PC MAIN BLK VS-112EA
5-1D	BA-V1047A300D	PC MAIN BLK VS-112ED
5-1E	BA-V1047A300E	PC MAIN BLK VS-112EV-M
5-1F	BA-V1047A300F	PC MAIN BLK VS-112EZ
5-1G	BA-V1047A300G	PC MAIN BLK VS-112ES
5-2A	BK-V1047A330A	PC OPERATION BLK VS-112EG [EG,ES]
5-2B	BA-V1047A330B	PC OPERATION BLK VS-112EK [VS-112EK,VS-105EK]
5-2C	BA-V1047A330C	PC OPERATION BLK VS-112EA [EA,ED,EZ]
5-2D	BA-V1047A330D	PC OPERATION BLK VS-112EV-M [EV-H]
5-3	BA-V1047A400A	PC PRE AMP BLK VS-112EG [EA,ED,EK,EG,ES,EV-M,EZ]

NOTE: PC MAIN BLK consists of MAIN PC BOARD and VIF BLOCK.

5. PC BOARD BLOCK (VS-115)

REF. NO.	PART NO.	DESCRIPTION
5-1	BA-V1047A300H	PC MAIN BLK VS-115EO
5-2	BA-V1047A330E	PC OPERATION BLK VS-115EO
5-3	BA-V1047A400A	PC PRE AMP BLK VS-112EG

NOTE: PC MAIN BLK consists of MAIN PC BOARD and VIF BLOCK.

5. PC BOARD BLOCK (VS-116)

REF. NO.	PART NO.	DESCRIPTION
5-1	BA-V1047A300J	PC MAIN BLK VS-116EO-G
5-2	BA-V1047A330F	PC OPERATION BLK VS-116EO-G
5-3	BA-V1047A400A	PC PRE AMP BLK VS-112EG

NOTE: PC MAIN BLK consists of MAIN PC BOARD and VIF BLOCK.

6. MAIN PC BOARD

REF. NO.	PART NO.	DESCRIPTION
6-IC1	EI-360333	IC EHM-M96A8U67K
6-IC2	EI-360334	IC AW2619
6-IC201	EI-360565	IC M5223P
6-IC202	EI-360561	IC AN3792
6-IC203	EI-360560	IC MN6178XAL
6-IC204	EI-360565	IC M5223P
6-IC205	EI-360563	IC AN3794
6-IC206	EI-360564	IC M54548L
6-IC401	EI-364136	IC MB88521-135M R-SYS4 CUSTOM
6-IC402	EI-353421	IC BA6229
6-IC403	EI-356238	IC LA6324
6-IC404	EI-360396	IC S-8054HN
6-IC405	EI-363347	IC TC9018P
6-IC501	EI-360648	IC BA5115
6-IC502	EI-358506	IC µPC 1513HA
6-IC601	EI-337530	IC µPC574J
6-IC602	EI-363951	IC LA7210 [EO-G]
6-IC701	EI-347116	IC LA6358
6-TR1to3	EI-308472	TR 2SA1115 E,F,G F05
6-TR4	ET-308141	TR 2SC2603 G F05
6-TR5,6	ET-308472	TR 2SA1115 E,F,G F05
6-TR7,8	ET-308141	TR 2SC2603 G F05
6-TR9	ET-308472	TR 2SA1115 E,F,G F05
6-TR10to13	ET-308141	TR 2SC2603 G F05
6-TR14	ET-308472	TR 2SA1115 E,F,G F05
6-TR15to17	ET-356224	TR 2SA1286 G,H,J F05
6-TR18to21	ET-308141	TR 2SC2603 G F05
6-TR22	ET-308472	TR 2SA1115 E,F,G F05
6-TR23	ET-308141	TR 2SC2603 G F05
6-TR24	ET-354414	TR DTC144ES
6-TR25	ET-361729	TR UN4217
6-TR26	ET-353897	TR DTC114ES [EG,EV-M,EO,EO-G]
6-TR27	ET-354415	TR DTA144ES
6-TR28	ET-354414	TR DTC144ES
6-TR29,30	ET-353897	TR DTC114ES [EG,EV-M,EO,EO-G]
6-TR31	ET-308141	TR 2SC2603 G F05
6-TR32	ET-361729	TR UN4217
6-TR201	ET-308141	TR 2SC2603 G F05
6-TR202	ET-356224	TR 2SA1286 G,H,J F05
6-TR203	ET-354365	TR DTC114YS
6-TR204	ET-322598	TR 2SB632K E,F
6-TR205	ET-308141	TR 2SC2603 G F05
6-TR206	ET-308472	TR 2SA1115 E,F,G F05
6-TR207,208	ET-308141	TR 2SC2603 G F05
6-TR401	ET-354371	TR DTC124ES
6-TR402	ET-355669	TR 2SC3246 G,H,J F05
6-TR403	ET-308472	TR 2SA1115 E,F,G F05
6-TR404,405	ET-360400	TR UN4210
6-TR406,407	ET-363953	TR DTA114TS
6-TR408	ET-354371	TR DTC124ES
6-TR410	ET-360401	TR UN4116
6-TR411	ET-308472	TR 2SA1115 E,F,G F05
6-TR413	ET-364040	TR UN421D
6-TR414	ET-308472	TR 1SA1115 E,F,G F05
6-TR416to418	ET-308472	TR 2SA1115 E,F,G F05
6-TR419	ET-363359	TR 2SD1406 GR]EV-M]
6-TR501	ET-308141	TR 2SC2603 G F05
6-TR502	ET-350795	TR 2SC3399 F05
6-TR503	ET-360646	TR DTA143ES F05
6-TR601,602	ET-308141	TR 2SC2603 G F05
6-TR603	ET-356224	TR 2SA1286 G,H,J F05
6-TR604	ET-321644	TR 2SC1213 C
6-TR605to607	ET-308472	TR 2SA1115 E,F,G F05 [EXCEPT EK]
6-TR608,609	ET-364093	TR 2SA1283 E,F F05
6-TR611	ET-308141	TR 2SC2603 G F05
6-TR612	ET-356236	TR FET 2SK363 GR.BL
6-TR613	ET-356224	TR 2SA1286 G,H,J F05 [EA,ED,EZ,ES,EV-M]
6-TR614	ET-308472	TR 2SA1115 E,F,G F05 [EO-G]
6-TR701,702	ET-363359	TR 2SD1406 GR
6-TR703	ET-356224	TR 2SA1286 G,H,J F05

REF. NO.	PART NO.	DESCRIPTION
6-D1	ED-344280	D SILICON H GMA-01-FY2 F05
6-D2	ED-624903	D SILICON H 1S2473
6-D3	ED-344280	D SILICON H GMA-01-FY2 F05 [EG,EV-M,EO,EO-G]
6-D4,5	ED-344280	D SILICON H GMA-01-FY2 F05
6-D201	ED-313846	D ZENER H HZ16 3
6-D202	ED-362998	D ZENER H HZS9.1J F05 B3
6-D203to205	ED-344280	D SILICON H GMA-01-FY2 F05
6-D402to405	ED-344280	D SILICON H GMA-01-FY2 F05
6-D406	ED-357754	D SILICON DS135D 200/1.0A
6-D407,408	ED-344280	D SILICON H GMA-01-FY2 F05
6-D409	ED-329051	D ZENER H HZ24 3 [EV-M]
6-D501	ED-346609	D ZENER H HZ9 C1
6-D601,602	ED-344280	D SILICON H GMA-01-FY2 F05
6-D603	ED-337266	D ZENER H HZ9 A1
6-D604,605	ED-344280	D SILICON H GMA-01-FY2 F05 [EXCEPT EK]
6-D606	ED-344280	D SILICON H GMA-01-FY2 F05
6-D608	ED-337266	D ZENER H HZ9 A1 [EA,ED,ES,EZ,EV-M]
6-D609,610	ED-344280	D SILICON H GMA-01-FY2 F05 [EXCEPT EK]
6-D701	ED-365109	D ZENER H MA1043-H
6-D702	ED-305706	D ZENER H HZ7 B3
6-D703to705	ED-344280	D SILICON H GMA-01-FY2 F05
6-VR1	EV-356579	R S-FIX H RH0615C13J 3P 102
6-VR2	EV-356575	R S-FIX H RH0615CJ3J 3P 222
6-VR201	EV-337945	R S-FIX H TM64K3 3P 0.30W 104
6-VR202	EV-356582	R S-FIX H RH0615CS4J 3P 473
6-VR401	EV-363511	R S-FIX EVTK-4CA00BQ4 3P 473
6-VR501	EV-356577	R S-FIX H RH0615C14J 3P 103
6-VR502	EV-356582	R S-FIX H RH0615CS4J 3P 473
6-VR701	EV-337957	R S-FIX H TM64K3 3P 0.30W 102
6-DL1	EH-360340	DL EFD-EN645A31P
6-DL2	EH-360341	DL EFD-HR124A13D
6-FL1	EH-360339	FILTER LC AP AF-25P [EG,EA,EV-M,EZ,EO,EO-G]
6-FL2	EH-360337	FILTER LC LP LF-47P
6-FL3	EH-364045	FILTER LC FF-78P
6-FL501	EO-360647	COIL OSC 1 MX-102
6-L1	EO-330252	COIL FIX 1 EL0606SKI 101K
6-L2	EO-351865	COIL FIX 1 LAL02 F05 330J
6-L3	EO-356599	COIL FIX 1 LAL02 F05 270K
6-L4,5	EO-357507	COIL FIX 1 LAL02 F05 121K
6-L6	EO-330252	COIL FIX 1 EL0606SKI 101K
6-L7,8	EO-360555	COIL FIX 1 LAL02 F05 180K
6-L9,10	EO-351868	COIL FIX 1 LAL02 F05 470K
6-L11,12	EO-354600	COIL FIX 1 LAL02 F05 101K
6-L13,14	EO-330252	COIL FIX 1 EL0606SKI 101K
6-L15	EO-353900	COIL FIX 1 LAL02 F05 150K
6-L16	EO-351868	COIL FIX 1 LAL02 F05 470K
6-L17	EO-330252	COIL FIX 1 EL0606SKI 101K
6-L18	EO-345889	COIL FIX 1 EL0606SKI 331J
6-L19	EO-360554	COIL FIX 1 LAL02 F05 221K
6-L20	EO-353902	COIL FIX 1 LAL02 F05 560K [EG,EV-M,EO,EO-G]
6-L21	EO-356599	COIL FIX 1 LAL02 F05 270K
6-L22	EO-330252	COIL FIX 1 EL0606SKI 101K
6-L24	EO-356599	COIL FIX 1 LAL02 F05 270K
6-L25	EO-357508	COIL FIX 1 LAL02 F05 151K
6-L26,28	EO-351869	COIL FIX 1 LAL02 F05 820K
6-L29	EO-353901	COIL FIX 1 LAL02 F05 560K [EG,EV-M,EO,EO-G]
6-L501	EO-420344	COIL FIX 1 FL7H 472J
6-L502	EO-383308	COIL FIX 1 FL7H 272J
6-L601	EO-360554	COIL FIX 1 LAL02 F05 221K
6-L602	EO-354600	COIL FIX 1 LAL02 F05 101K
6-L603	EO-351868	COIL FIX 1 LAL02 F05 470K [EO-G]
6-X1	EI-363362	OSC X'TAL MX-44 4.433619MHZ [EO-G]
6-X401	EI-347991	OSC CE CSA6.00MS 6MHZ
6-X601	EI-363952	OSC CE CSB500E5 [EO-G]
6-SF1,201	EF-344106	⚠ FUSE ICP-N10 150V 0.4A
6-FR1	ER-348272	⚠ R FUSE ERD2FC S10 1/4W 12R0G
6-R207	ER-340542	R MF H F05 1/6W 7502F
6-R231	ER-360559	R FUSE RF50S F12 1/2W 1R0J
6-R463	ER-353878	R OMF H S15 FS 1W 2R2J
6-R518	ER-337336	R MF H F05 1/6W 3302F
6-C2	EC-307793	C EC V F05 NP SM 220M 10DC
6-C236	EC-200948	C EC V F05 NP SM 1R0M 50DC
6-C522	EC-337966	C PP V APS 103J 100DC
6-C610	EC-358805	C TT V EF R47M 35.0DC
6-1A	EJ-363366	JACK PLATE VIDEO B-2 [EG,EO,EO-G]
6-1B	EJ-363367	JACK PLATE VIDEO B-1 [EK,ES]
6-1C	EJ-363369	JACK PATE VIDEO A-1 [EA,ED,EZ]
6-1D	EJ-363368	JACK PLATE VIDEO A-2[EV-M]
6-2	ZS-353965	PLX BR30×12STL CMT [JACK PLATE FIX]
6-3A	BV-363231	RF CONVERTER BOOSTER EO [EG,EO,EO-G]
6-3B	BV-363233	RF CONVERTER SW MDLC2S090A EA [EA]
6-3C	BV-363943	RF CONVERTER SW ED [ED]
6-3D	BV-363232	RF CONVERTER BOOSTER EK [EK,ES]
6-3E	BV-363234	RF CONVERTER SW MDLC2D093A EV [EV-M,EZ]
6-4A	BV-V1047A900A	VIF BLK VS-112EG [EG,EV-M]
6-4B	BV-V1047A900B	VIF BLK VS-112EK
6-4C	BV-V1047A900C	VIF BLK VS-112EA
6-4D	BV-V1047A900D	BIF BLK VS-112ED
6-4E	BV-V1047A900E	VIF BLK VS-112EZ
6-4F	BV-V1047A900F	VIF BLK VS-112ES
6-4G	BV-V1047A900G	VIF BLK VS-115EO
6-4H	BV-V1047A900H	VIF BLK VS-116EO-G
6-5	EZ-200473	SILICON RUBBER SHEET TC-30
6-6	ZS-363459	PLX BR26×06STL CMT [RF CONVERTER FIX]
6-7	EJ-363427	SOCKET IC DICS 64PL

7. OPERATON PC BOARD

REF. NO.	PART NO.	DESCRIPTION
7-IC1	EI-364135	IC MB88501-395M R-OPE3 CUSTOM [EXCEPT EO-G]
7-IC1A	EI-366680	IC MB88501-436M R-OPE4 CUSTOM [EO-G]
7-IC2	EI-360404	IC M5450-011P
7-TR1to6	ET-308141	TR 2SC2603 G F05 [EO,EO-G]
7-TR7to13	ET-308141	TR 2SC2603 G F05
7-TR14	ET-364060	TR DTC143ES
7-TR15	ET-308141	TR 2SC2603 G F05
7-D1to14	ED-356424	D LED BG5525S GREEN
7-D15to42	ED-624903	D SILICON H 1S2473
7-D50	ED-355607	D LED PR 5505S RED
7-D52	ED-355607	D LED PR 5505S RED [EA,ED,EZ,EV-M]
7-D53	ED-355607	D LED PR 5505S RED
7-D54	ED-356424	D LED BG5525S GREEN
7-D55to57	ED-355607	D LED PR 5505S RED
7-D58,59	ED-624903	D SILICON H 1S2473
7-D60	ED-355607	D LED PR 5505S RED
7-D62	ED-624903	D SILICON H 1S2473 [EO-G]
7-D65	ED-624903	D SILICON H 1S2473 [EA,ED,EZ]
7-D68	ED-624903	D SILICON H 1S2473 [EXCEPT EO,EO-G]
7-D70	ED-624903	D SILICON H 1S2473
7-SW1	ES-360408	SW SLIDE ESD-14187 1-01-02N
7-SW3	ES-349474	SW TACT SKHHAM004A [EA,ED,EZ,EV-M]
7-SW4to22	ES-349474	SW TACT SKHHAM004A

REF. NO.	PART NO.	DESCRIPTION
7-VR1	EV-356322	R S-FIX H KVSF637A 3P 502
7-X1	EI-356371	OSC X'TAL MS-309 4.194304MHZ
7-IB1	EH-347743	COMP R RKC1/8B4 103J
7-PM1A	EE-360406	TUNING UNIT UBH02 8CH 203 [EG,ES,EV-M]
7-PM1B	EE-360407	TUNING UNIT UBH14 8CH 203 [EK]
7-PM1C	EE-364669	TUNING UNIT UBH020513A EA 8CH203 [EA,ED,EZ]
7-PM1D	EE-360405	TUNING UNIT UBH050028A 14CH 203 [EO,EO-G]

8. FUNCTION PC BOARD

REF. NO.	PART NO.	DESCRIPTION
8-IC1	EI-356370	IC LA7224
8-D1	ED-360409	D PHOT PN323B
8-D2	ED-344280	D SILICON H GMA-01-FY2 F05
8-SW1,2	ES-349474	SW TACT SKHHAM004A
8-VR1	EV-360410	VR ROTARY K091C0G0C 103
8-VR2	EV-360569	VR ROTARY K091C0G0C 104
8-FL1	EO-356372	COIL TUN 1 038-332 38KHZ

9. PRE AMP PC BOARD

REF. NO.	PART NO.	DESCRIPTION
9-IC1	EI-352714	IC HA11752
9-TR1	ET-308141	TR 2SC2603 G F05
9-TR2to4	ET-347961	TR 2SD1012-V G F05
9-L1	EO-357508	COIL FIX 1 LAL02 F05 151K
9-L2	EO-353902	COIL FIX 1 LAL02 F05 680K
9-L3	EO-330252	COIL FIX 1 EL0606SKI 101K

10. VIF BLOCK

REF. NO.	PART NO.	DESCRIPTION
10-1A	EE-345115	TV TUNER TEED1-A04A [EG,EV-M]
10-1B	EE-345116	TV TUNER TEEB1-013A [EK]
10-1C	EE-345117	TV TUNER TEES1-017A [EA]
10-1D	EE-363941	TV TUNER TEEZ1-042A ED [ED]
10-1E	EE-352284	TV TUNER TEEZ1-020A [EZ]
10-1F	EE-366760	TV TUNER ES [ES]
10-1G	EE-363214	TV TUNER A25A [EO]
10-1H	EE-366792	TV TUNER TEEE1-A39A [EO-G]

11. POWER SUPPLY PC BOARD

REF. NO.	PART NO.	DESCRIPTION
11-TR1	ET-364153	TR 2SC3246 J,K F05
11-D1	ED-363350	D SILICON S5566B
11-D2	ED-363350	D SILICON S5566B
11-D3to6	ED-363351	⚠ D SILICON DSA17C
11-D7to10	ED-363350	⚠ D SILICON S5566B
11-FR1	ER-364508	⚠ R FUSE ERQ-12H F17 1/2W R56K
11-FR2	ER-362257	⚠ R FUSE ERQ-12H F17 1/2W R47K
11-FR3	ER-365157	⚠ R FUSE H F10 ERQ-14LE 1/4W R43K
11-FR5	ER-200595	⚠ R FUSE ERD2FC S10 1/4W 5R6J
11-C2	EC-363490	C EC V CUT SME 222M 16.0DC
11-C3,4	EC-363491	C EC V CUT SME 222M 25.0DC
11-C5	EC-361942	⚠ C CE V V 103Z 400AC [EA,ED,EG,EK,ES,EV-M,EZ]
11-C5A	EC-364049	⚠ C CE V E 472M400AC [EO]
11-T901A	BT-363353	⚠ TRANS POWER V47EG [EG]
11-T901B	BT-363945	⚠ TRANS POWER V47EK [EK]
11-T901C	BT-362244	⚠ TRANS POWER V47EA [EA]
11-T901D	BT-363948	⚠ TRANS POWER V47EO [ED,EO,EO-G]
11-T901E	BT-363946	⚠ TRANS POWER V47EV-M [EV-M]
11-T901F	BT-363950	⚠ TRANS POWER V47EZ [EZ]
11-T901G	BT-363949	⚠ TRANS POWER V47ES [ES]
11-F1A	EF-623103	⚠ FUSE SEMKO T 1.00A 250V [EXCEPT EK]
11-F2A	EF-601301	⚠ FUSE SEMKO T 2.00A 250V [EXCEPT EK]
11-F1B	EF-355226	⚠ FUSE BET T 1.00A 250V [EK]
11-F2B	EF-355398	⚠ FUSE BET T 2.00A 250V [EK]

12. EVM PC BOARD (EG,EK,EV-M,ES ONLY)

REF. NO.	PART NO.	DESCRIPTION
12-SW901	ES-354430	⚠ SW SLIDE 00220950 02-02-2H [EG,EK,EV-M,ES]
12-SW902	EZ-362247	⚠ CIRCUIT PROTECTOR TBC6211-21-0442 [EV-M]

13. MOTOR PC BOARD

REF. NO.	PART NO.	DESCRIPTION
13-R21	ER-362089	R CB H R50X FC16 1/2W 1R6J

14. SENSOR REEL PC BOARD

REF. NO.	PART NO.	DESCRIPTION
14-PH1	ET-361463	PHOT SENSOR ON2170 Q,R

15. SENSOR (L) PC BOARD

REF. NO.	PART NO.	DESCRIPTION
15-TR1	ET-361490	TR PHOT PN268 R,S

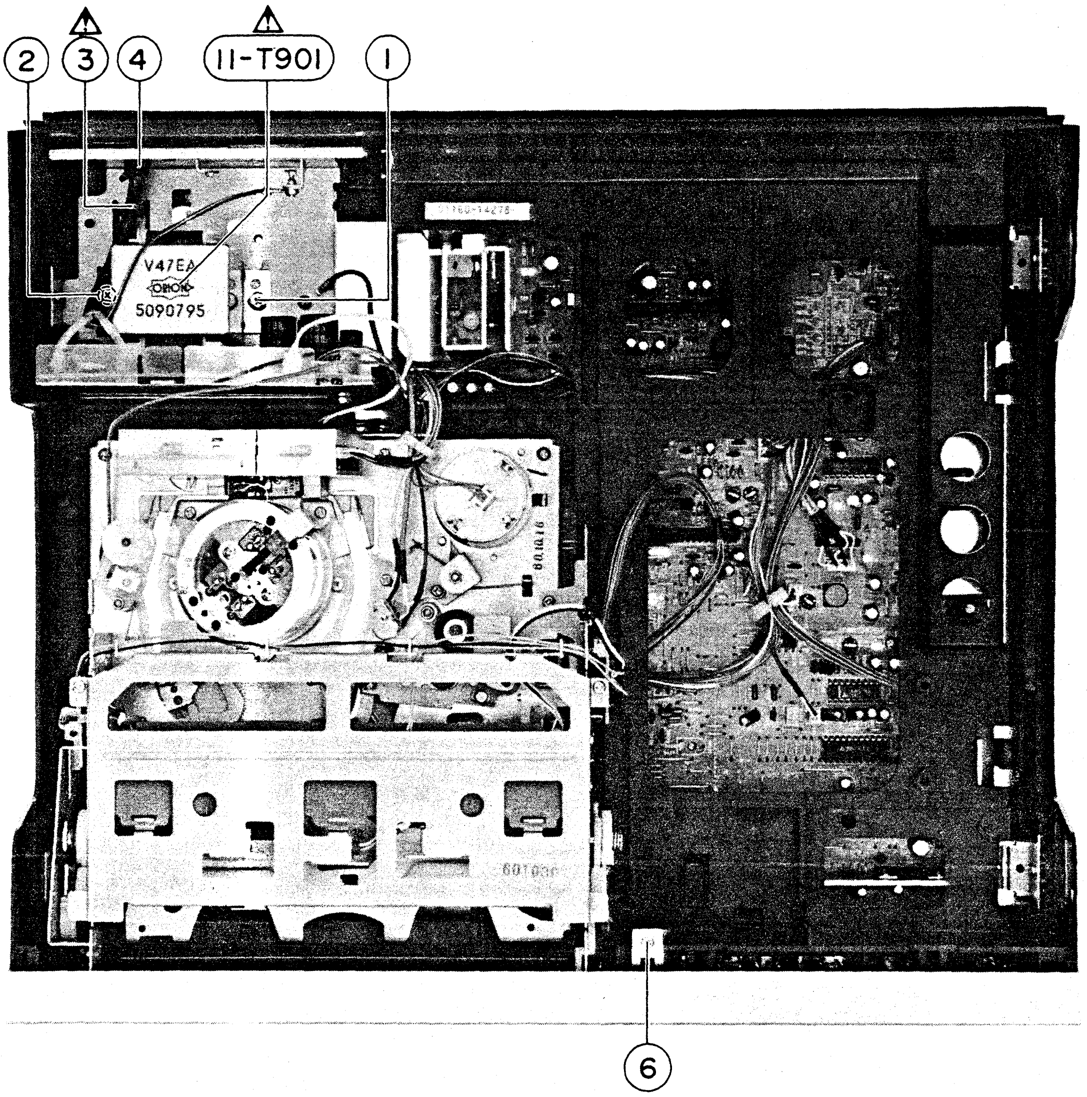
16. SENSOR (R) PC BOARD

REF. NO.	PART NO.	DESCRIPTION
16-TR1	ET-361490	TR PHOT PN268 R,S

17. SWITCH (EJ) PC BOARD

REF. NO.	PART NO.	DESCRIPTION
17-SW1	ES-353622	SW PUSH EVQ-WU7001 02-2

ASSEMBLY BLOCK

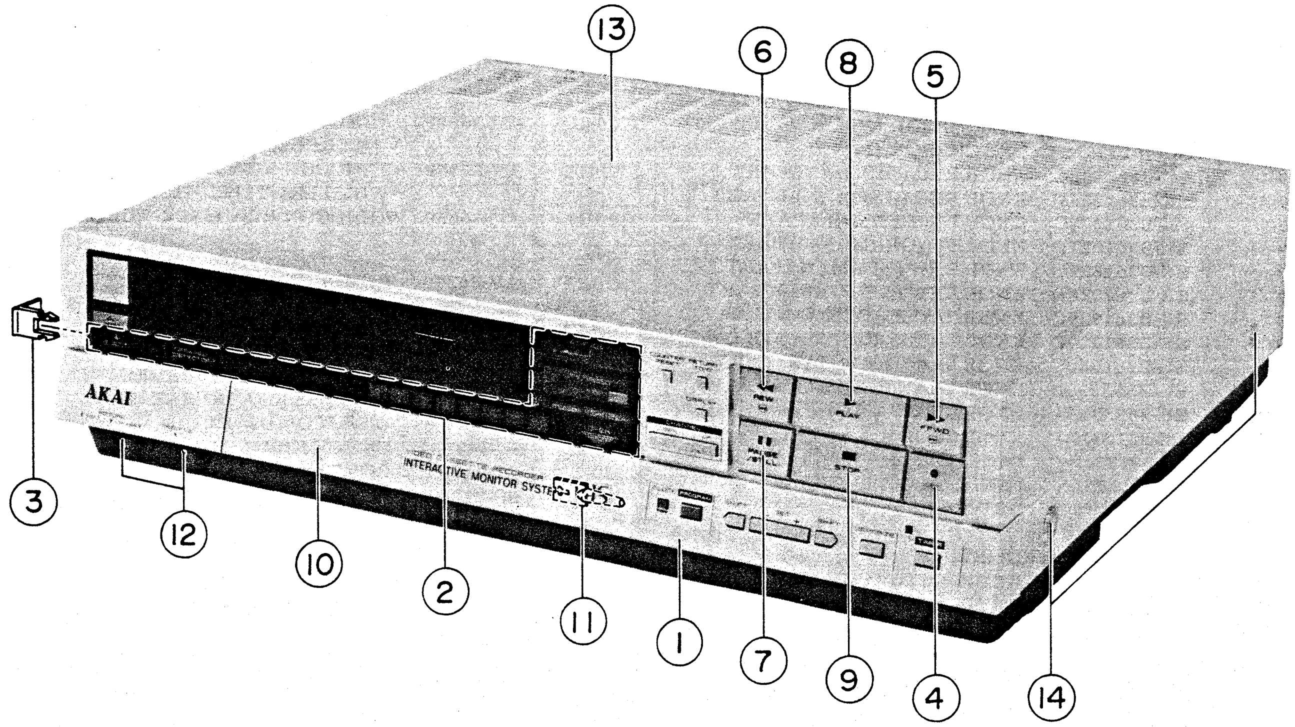


18. ASSEMBLY BLOCK

REF. NO.	PART NO.	DESCRIPTION
	ASSEMBLY BLOCK	
18-1	ZS-357936	DELL TIGHT BID40x08 STL NI3 [TRANS POWER FIX]
18-2	ZS-363912	PLX BR40x10STL CMT [TRANS POWER FIX]
18-3A	EW-364043	⚠ AC CORD 2 CORES KP419C, LTCE2F-CB EV [EG,EV-M,ES,EO-G]
18-3B	EW-364044	⚠ AC CORD 2 CORES NRBS, LC2x0.75-CB B [EK]
18-3C	EW-364428	⚠ AC CORD 3 CORES VM-0418, 3x0.75 S [EA,EZ]
18-3D	EW-362134	⚠ AC CORD 2 CORES KP-419C, LTCE2F-CB [ED,EO]
18-4	EZ-692908	STRAIN RELIEF SR-5N-4[EA,EZ]
18-5x	SA-353927B	FOOT (2)
18-6	ZS-357946	PLX PAN30x10STL CMT C080 [PANEL FRONT FIX]

REF. NO.	PART NO.	DESCRIPTION
	LINE FILTER PC BPARD (EO-G ONLY)	
18-FL1x	EO-339907	COIL LF FK0B160MH16 100.0μH [EO-G]
18-C5x	EC-364049	⚠ C CE V 472M 400AC [EO-G]
	POWER SUPPLY PC BOARD	
11-T901A	BT-363353	⚠ TRANS POWER V47EG [EG]
11-T901B	BT-363945	⚠ TRANS POWER V47EK [EK]
11-T901C	BT-362244	⚠ TRANS POWER V47EA [EA]
11-T901D	BT-363948	⚠ TRANS POWER V47EO [ED,EO,EO-G]
11-T901E	BT-363946	⚠ TRANS POWER V47EV-M [EV-M]
11-T901F	BT-363950	⚠ TRANS POWER V47EZ [EZ]
11-T901G	BT-363949	⚠ TRANS POWER V47ES [ES]

FINAL ASSEMBLY BLOCK



19. FINAL ASSEMBLY BLOCK

REF. NO.	PART NO.	DESCRIPTION
	PANEL FRONT BLOCK	
19-1	BD-D1047B130M	PANEL FRONT BLK VS-105EK-B
19-1A	BD-V1047A130A	PANEL FRONT BLK VS-112EG
19-1B	BD-V1047A130B	PANEL FRONT BLK VS-112EK
19-1C	BD-V1047A130C	PANEL FRONT BLK VS-112EA
19-1D	BD-V1047A130D	PANEL FRONT BLK VS-112ED
19-1E	BD-V1047A130E	PANEL FRONT BLK VS-112EV-M
19-1F	BD-V1047A130F	PANEL FRONT BLK VS-112EZ
19-1G	BD-V1047A130G	PANEL FRONT BLK VS-112ES
19-1H	BD-V1047B130A	PANEL FRONT BLK VS-112EG-B
19-1I	BD-V1047B130B	PANEL FRONT BLK VS-112EK-B
19-1J	BD-V1047B130C	PANEL FRONT BLK VS-112EA-B
19-1K	BD-V1047B130D	PANEL FRONT BLK VS-112ED-B
19-1L	BD-V1047B130E	PANEL FRONT BLK VS-112EV-MB
19-1M	BD-V1047B130F	PANEL FRONT BLK VS-112EZ-B
19-1N	BD-V1047B130G	PANEL FRONT BLK VS-112ES-B
19-1O	BD-V1047A130H	PANEL FRONT BLK VS-115EO
19-1P	BD-V1047B130H	PANEL FRONT BLK VS-115EO-B
19-2	SP-361782K	PLATE DECORATION VS-105EK
19-2A	SP-361338A	PLATE DECORATION VS-112EG
19-2B	SP-361338M	PLATE DECORATION VS-112EK
19-2C	SP-361338L	PLATE DECORATION VS-112EA
19-2D	SP-361338J	PLATE DECORATION VS-112ED
19-2E	SP-361338B	PLATE DECORATION VS-112EV-M
19-2F	SP-361338K	PLATE DECORATION VS-112EZ
19-2G	SP-361338N	PLATE DECORATION VS-112ES
19-2H	SP-361338C	PLATE DECORATION VS-115EO
19-3	SC-361335B	CAP CURSOR (2) [EXCEPT VS-105]
19-3B	SC-361335A	CAP CURSOR (1)
19-4	SK-B361325A	KNOB REC PART [EXCEPT VS-105]
19-4B	SK-B361325B	KNOB REC-B PART
19-5	SK-B361327A	KNOB FF PART[EXCEPT VS-105]
19-5B	SK-B361327B	KNOB FF-B PART
19-6	SK-B361328A	KNOB REW PART [EXCEPT VS-105]
19-6B	SK-B361328B	KNOB REW-B PART
19-7	SK-B361329A	KNOB PAUSE PART [EXCEPT VS-105]
19-7B	SK-B361329B	KNOB PAUSE-B PART
19-8	SK-B361330A	KNOB PLAY PART [EXCEPT VS-105]
19-8B	SK-B361330B	KNOB PLAY-B PART
19-9	SK-361331A	KNOB STOP [EXCEPT VS-105]
19-9B	SK-361331B	KNOB STOP-B
19-10	SP-361332B	PANEL DOOR FRONT [EXCEPT VS-105]
19-10B	SP-361332A	PANEL DOOR FRONT-B
19-11	AV-361336	DRIVER
	FINAL ASSEMBLY BLOCK	
19-12	SK-361334	KNOB PICTURE TRACKING
19-13	BC-361486A	COVER UPPER [EXCEPT VS-105]
19-13B	BC-361486B	COVER UPPER-B
19-14	ZS-357943	ST BID40x10STL NI3 SPECIAL [COVER UPPER FIX] [EXCEPT VS-105]
19-14B	ZS-358696	ST BID40x10STL BNI SPECIAL [BL][COVER UPPER FIX]
19-15x	EW-348414	CORD PAL [ANTENNA CABLE]

NOTE: PANEL FRONT BLOCK consists of 19-2 to 19-11.

SYMBOL FOR COLOR VARIATION

NON : STANDARD COLOR
B or BL : BLACK

19. FINAL ASSEMBLY BLOCK

REF. NO.	PART NO.	DESCRIPTION
	PANEL FRONT BLOCK	
19-1	BD-V1047A130J	PANEL FRONT BLK VS-116EO-G
19-1B	BD-V1047B130J	PANEL FRONT BLK VS-116EO-GB
19-2	SP-361782A	PLATE DECORATION VS-116EO-G
19-3	SC-361335B	CAP CURSOR (2)
19-3B	SC-361335A	CAP CURSOR (1)
19-4	SK-B361325C	KNOB REC (GERMAN) PART
19-4B	SK-B361325D	KNOB REC (GERMAN)-B PART
19-5	SK-B361327C	KNOB FF (GERMAN) PART
19-5B	SK-B361327D	KNOB FF (GERMAN)-B PART
19-6	SK-B361328C	KNOB REW (GERMAN) PART
19-6B	SK-B361328D	KNOB REW (GERMAN)-B PART
19-7	SK-B361329C	KNOB PAUSE (GERMAN) PART
19-7B	SK-B361329D	KNOB PAUSE (GERMAN)-B PART
19-8	SK-B361330C	KNOB PLAY (GERMAN) PART
19-8B	SK-B361330D	KNOB PLAY (GERMAN)-B PART
19-9	SK-361331A	KNOB STOP
19-9B	SK-361331B	KNOB STOP-B
19-10	SP-361332B	PANEL DOOR FRONT
19-10B	SP-361332A	PANEL DOOR FRONT-B
19-11	AV-361336	DRIVER
	FINAL ASSEMBLY BLOCK	
19-12	SK-361334	KNOB PICTURE TRACKING
19-13	SP-361486C	COVER UPPER EO-G
19-13B	SP-361486D	COVER UPPER EO-G-B
19-14	ZS-357943	ST BID40x10STL NI3 SPECIAL [COVER UPPER FIX]
19-14B	ZS-358696	ST BID40x10STL BNI SPECIAL [BL] [COVER UPPER FIX]
19-15x	EW-348414	CORD PAL [ANTENNA CABLE]

NOTE: PANEL FRONT BLOCK consists of 19-2 to 19-11.

SYMBOL FOR COLOR VARIATION

NON : STANDARD COLOR
B or BL : BLACK

20. REMOTE CONTROL UNIT

REF. NO.	PART NO.	DESCRIPTION
20-1A	AV-363357	REMOCON RC-V155B-E WIRELESS (T) [EG,EK,ES] [EXCEPT VS-105]
20-1B	AV-363496	REMOCON RC-V155A-E WIRELESS (T) [EA,ED,EV-M,EZ]
20-1C	AV-363494	REMOCON RC-V155B-EB WIRELESS (T) [BL] [EG,EK,ES,EO]
20-1D	AV-363498	REMOCON RC-V155A-EB WIRELESS (T) [BL] [EA,ED,EV-M,EZ]
20-1E	AV-363503	REMOCON RC-V155B-G WIRELESS (T) [EO-G]
20-1F	AV-363504	REMOCON RC-V155B-GB WIRELESS(T) [EO-G]
20-IC1	EI-749983	IC μPD1943G
20-TR1	ET-718040	TR 2SD1468
20-D1	ED-705414	D LED SE303A INFRARED
20-D2	ED-705414	D LED SE303A INFRARED
20-D3	ED-718039	D SILICON DAN201
20-X1	EI-749984	OSC CE KBR455BAT
20-2	SC-718041	COVER BATTERY
20-2B	SC-718043	COVER BATTERY-B

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BA-V1047A300C	5-1C
BA-V1047A300D	5-1D
BA-V1047A300E	5-1E
BA-V1047A300F	5-1F
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BA-V1047A300J	5-1
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AKAI

MODEL VS-112EG/EK/EK(Y1)/EA ED/EV-M/EZ/ES
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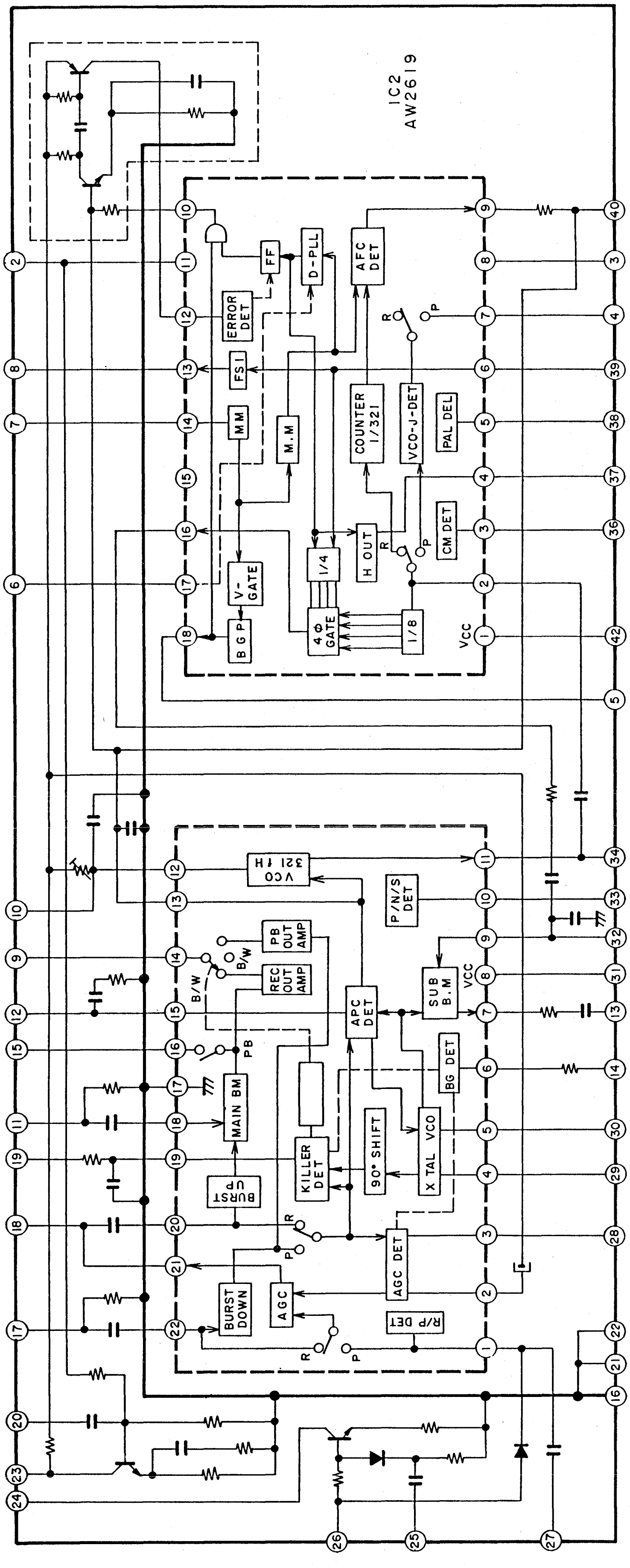
AW2619 [VIDEO (CHROMA) SIGNAL IC]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ERROR DET
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MM
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VCO-J-DET
PAL DEL
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B/W
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90° SHIFT
X TAL VCO
BURST UP
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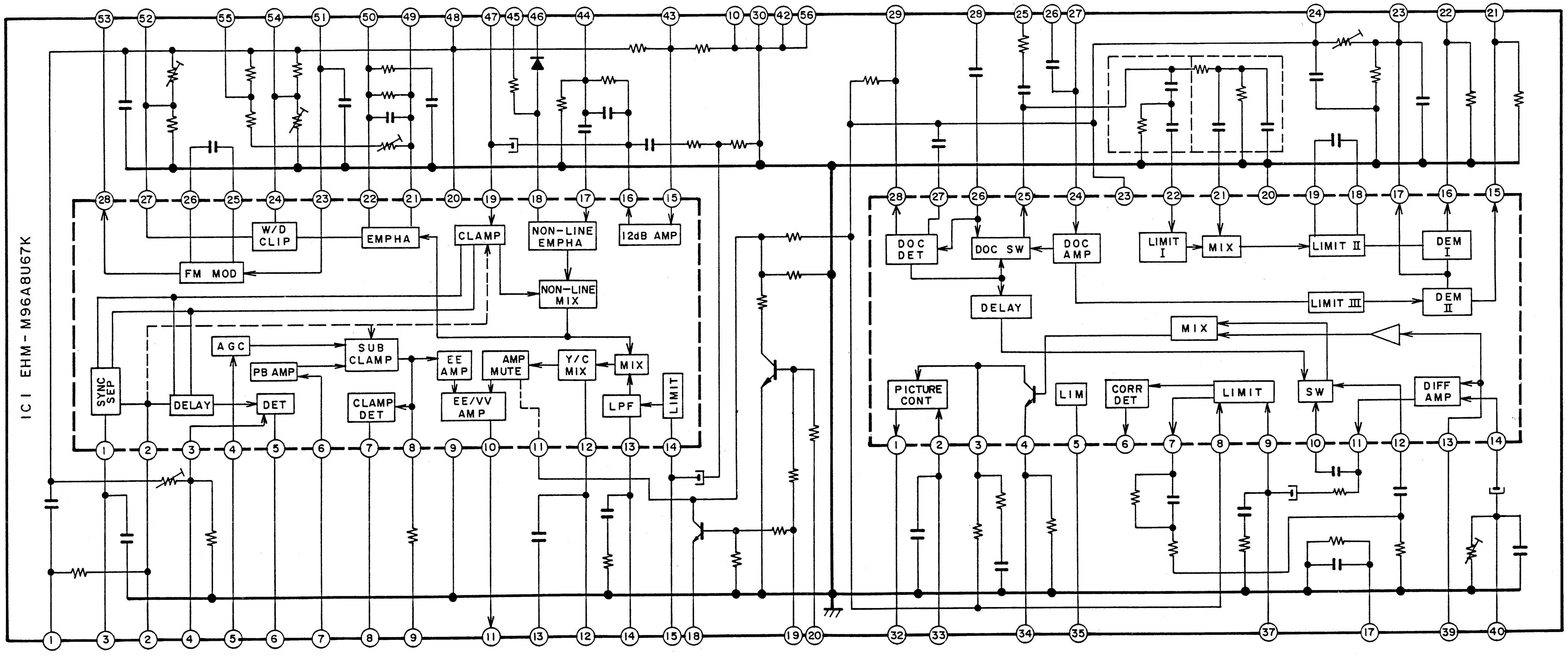
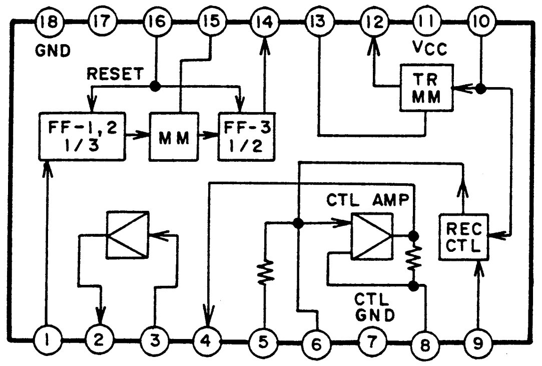
BURST DOWN
AGC
R/P DET
R
P
PB

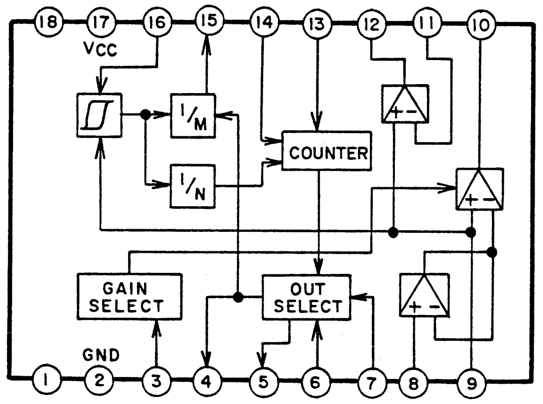
EHM-M96A8U67K [VIDEO (Y) SIGNAL IC]


IC1 EHM-M96A8U67K
W/D CLIP
EMPHA
CLAMP
NON-LINE EMPHA
12dB AMP
FM MOD
NON-LINE MIX
SYNC SEP
DELAY
DET
AGC
PB AMP
SUB CLAMP
EE AMP
AMP MUTE
Y/C MIX
MIX
LPF
LIMIT
CLAMP DET
EE/VV AMP
DOC DET
DOC SW
DOC AMP
LIMIT I
MIX
LIMIT II
DEM I
DELAY
LIMIT III
DEM II
MIX
PICTURE CONT
LIM
CORR DET
LIMIT
SW
DIFF AMP

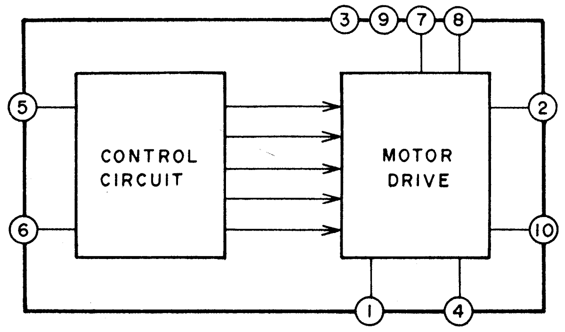
AN3792 (DRUM SERVO INTERFACE IC)


18
17
16
15
14
13
12
11
10
GND
VCC
RESET
TR
MM
FF-1, 2
1/3
MM
FF-3
1/2
CTL AMP
REC
CTL
CTL
GND
1
2
3
4
5
6
7
8
9

AN3794 (CAPSTAN SERVO INTERFACE IC)


18
17
16
15
14
13
12
11
10
VCC
1/M
1/N
COUNTER
GAIN
SELECT
OUT
SELECT
GND
1
2
3
4
5
6
7
8
9

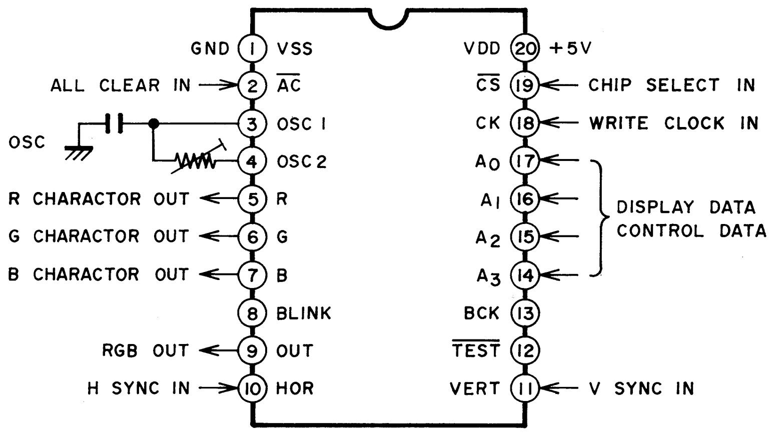
BA6229 (MOTOR DRIVER)


3
9
7
8
5
6
2
10
CONTROL
CIRCUIT
MOTOR
DRIVE
1
4

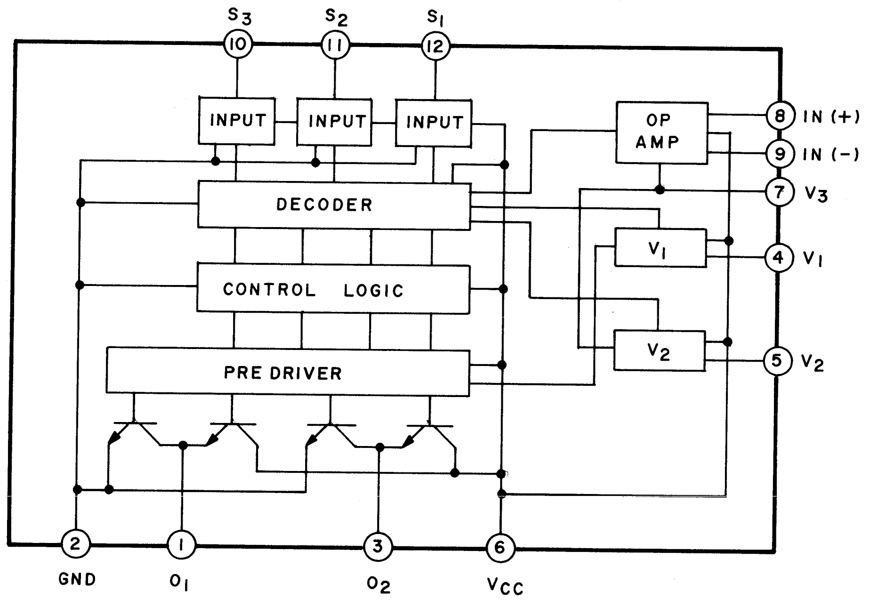
CONTROL MODE

MODE	INPUT		OUTPUT	
	5pin	6pin	2pin	10pin
STOP	L	L	OPEN	OPEN
NORMAL	H	L	H	L
REVERSE	L	H	L	H
BRAKE	H	H	L	L

M50450-011P (IMS)

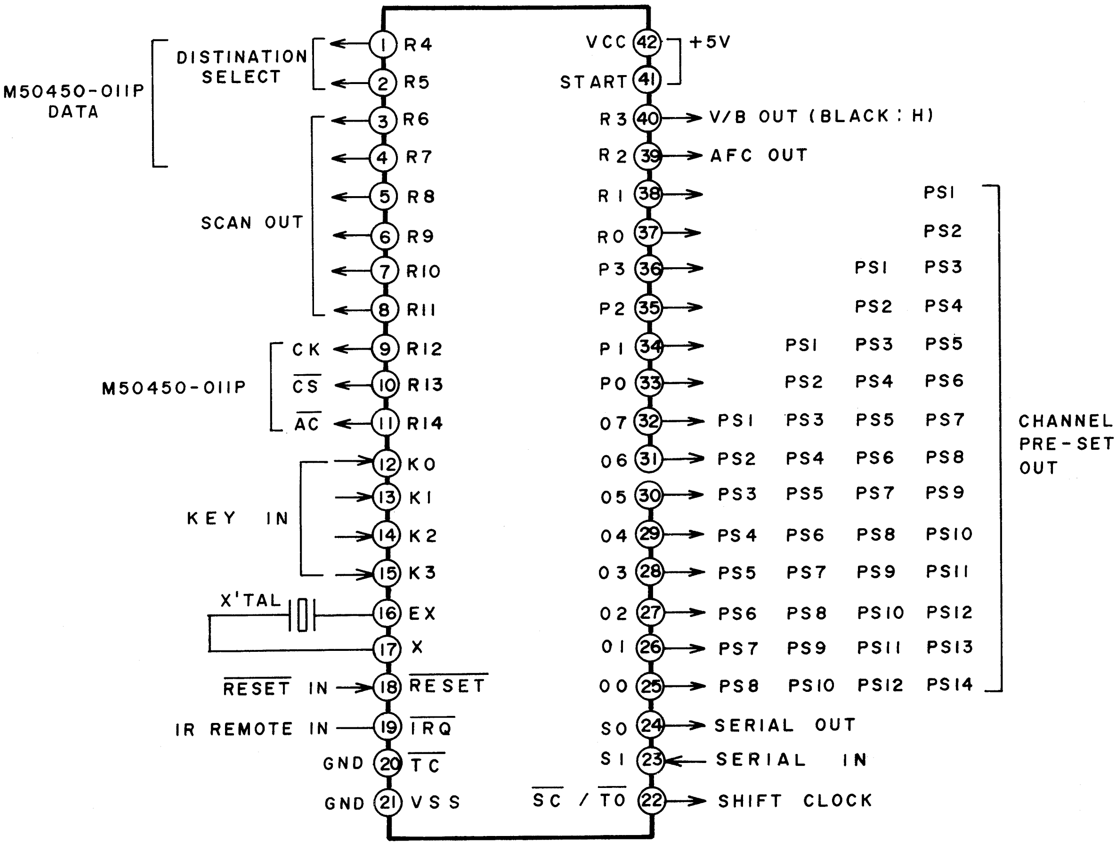

GND
1
VSS
ALL CLEAR IN
2
AC
OSC
3
OSC 1
4
OSC 2
R CHARACTOR OUT
5
R
G CHARACTOR OUT
6
G
B CHARACTOR OUT
7
B
8
BLINK
RGB OUT
9
OUT
H SYNC IN
10
HOR
VDD
20
+5V
CS
19
CHIP SELECT IN
CK
18
WRITE CLOCK IN
A0
17
A1
16
DISPLAY DATA
CONTROL DATA
A2
15
A3
14
BCK
13
TEST
12
VERT
11
V SYNC IN

M54548L (CAPSTAN DRIVE IC)

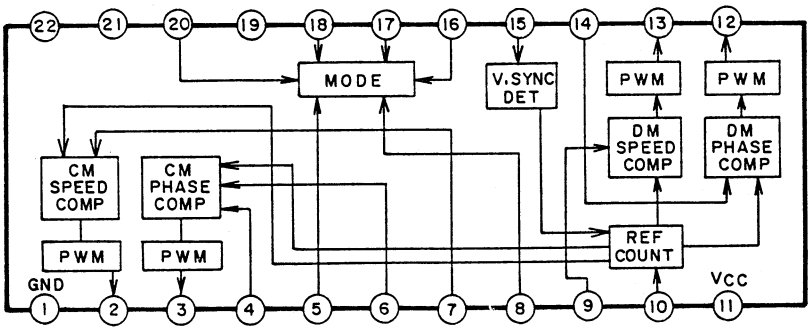

S3
10
S2
11
S1
12
INPUT
INPUT
INPUT
OP
AMP
8
IN (+)
9
IN (−)
7
V3
DECODER
V1
4
V1
CONTROL LOGIC
V2
5
V2
PRE DRIVER
2
1
3
6
GND
O1
O2
VCC

INPUT			OUTPUT		Vcc SELECT	MODE
S_1	S_2	S_3	$\bar{O}_1$	$\bar{O}_2$		
L	L	L	"OFF" state	"OFF" state	–	STOP
L	L	H	H	L	Vs	PLAY (+)
L	H	L	L	H	Vs	PLAY (–)
L	H	H	H	L	V_2	FF (2)
H	L	L	L	H	V_2	REW (2)
H	L	H	H	L	V_1	FF (1)
H	H	L	L	H	V_1	REW (1)
H	H	H	L	L	Vs	BRAKE

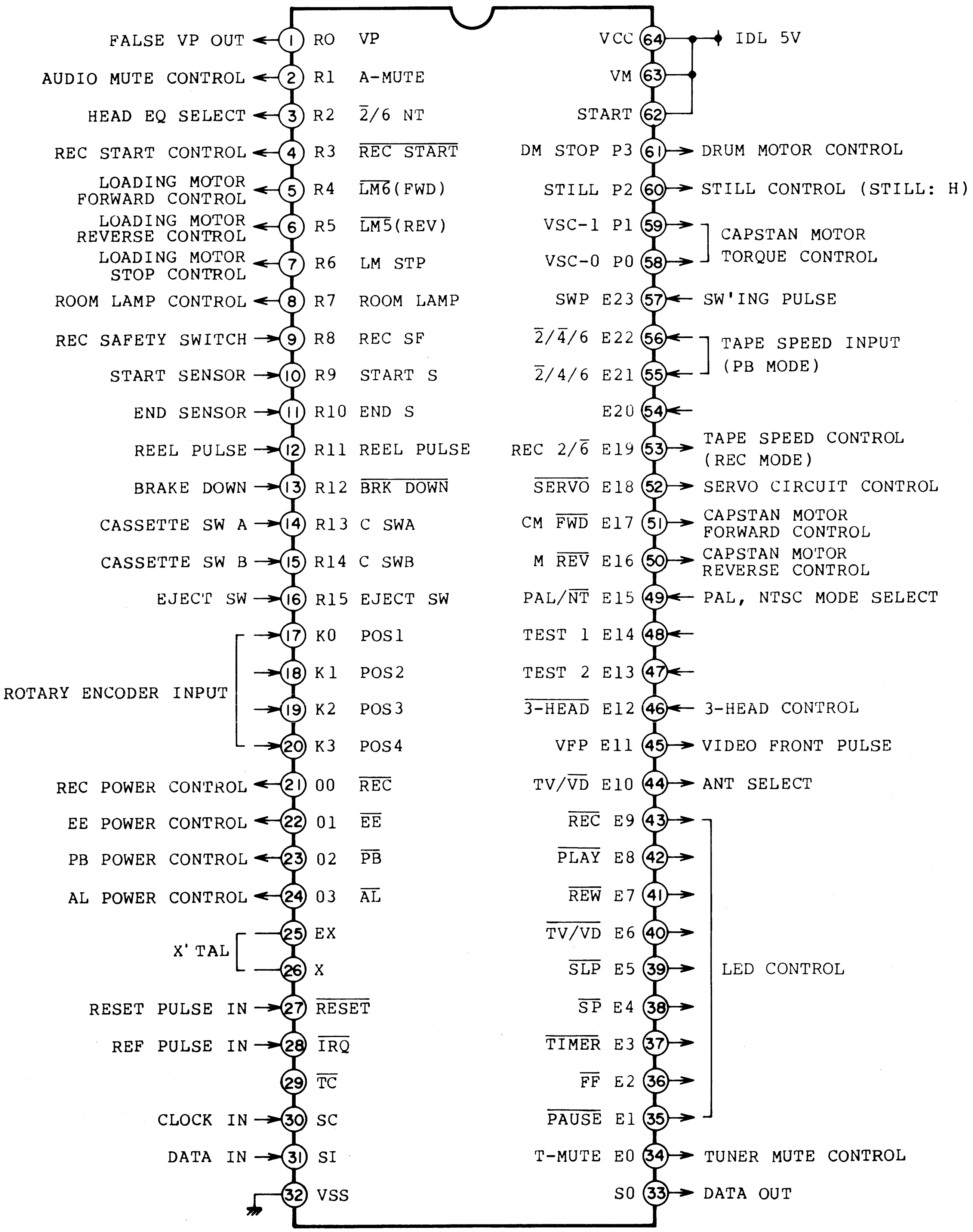
MB88501-395M (OPERATION MPU)


M50450-011P DATA
DISTINATION SELECT
SCAN OUT
M50450-011P
CK
CS
AC
KEY IN
X'TAL
RESET IN
IR REMOTE IN
GND
GND
1 R4
2 R5
3 R6
4 R7
5 R8
6 R9
7 R10
8 R11
9 R12
10 R13
11 R14
12 K0
13 K1
14 K2
15 K3
16 EX
17 X
18 RESET
19 IRQ
20 TC
21 VSS
VCC 42
START 41
+5V
R3 40 V/B OUT (BLACK : H)
R2 39 AFC OUT
R1 38 PS1
R0 37 PS2
P3 36 PS1 PS3
P2 35 PS2 PS4
P1 34 PS1 PS3 PS5
P0 33 PS2 PS4 PS6
07 32 PS1 PS3 PS5 PS7
06 31 PS2 PS4 PS6 PS8
05 30 PS3 PS5 PS7 PS9
04 29 PS4 PS6 PS8 PS10
03 28 PS5 PS7 PS9 PS11
02 27 PS6 PS8 PS10 PS12
01 26 PS7 PS9 PS11 PS13
00 25 PS8 PS10 PS12 PS14
CHANNEL PRE-SET OUT
SO 24 SERIAL OUT
SI 23 SERIAL IN
SC / TO 22 SHIFT CLOCK

MN6178XAL (DIGITAL SERVO IC)


22
21
20
19
18
17
16
15
14
13
12
MODE
V.SYNC DET
PWM
PWM
DM SPEED COMP
DM PHASE COMP
CM SPEED COMP
CM PHASE COMP
REF COUNT
PWM
PWM
GND
VCC
1
2
3
4
5
6
7
8
9
10
11

MB88521-135M (SYSCON MPU)



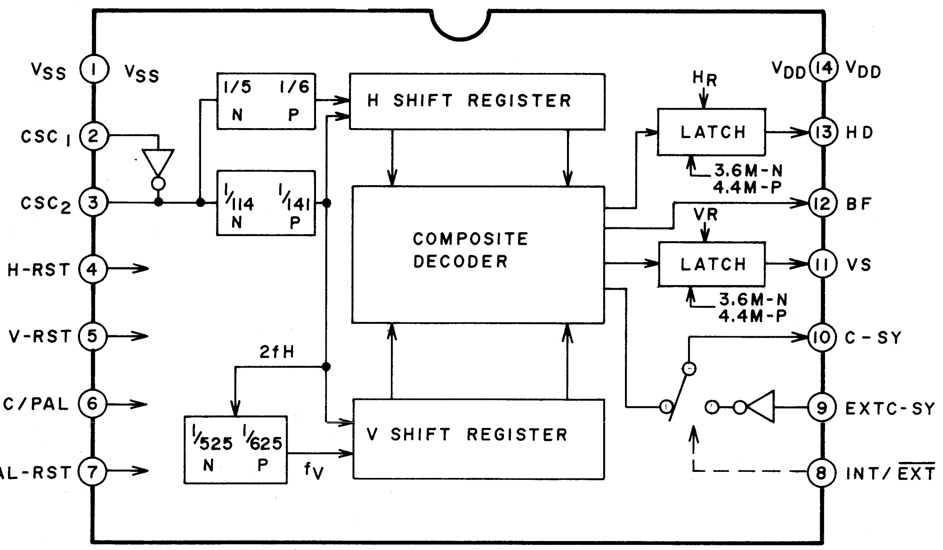
FALSE VP OUT 1 R0 VP
AUDIO MUTE CONTROL 2 R1 A-MUTE
HEAD EQ SELECT 3 R2 2/6 NT
REC START CONTROL 4 R3 REC START
LOADING MOTOR FORWARD CONTROL 5 R4 LM6(FWD)
LOADING MOTOR REVERSE CONTROL 6 R5 LM5(REV)
LOADING MOTOR STOP CONTROL 7 R6 LM STP
ROOM LAMP CONTROL 8 R7 ROOM LAMP
REC SAFETY SWITCH 9 R8 REC SF
START SENSOR 10 R9 START S
END SENSOR 11 R10 END S
REEL PULSE 12 R11 REEL PULSE
BRAKE DOWN 13 R12 BRK DOWN
CASSETTE SW A 14 R13 C SWA
CASSETTE SW B 15 R14 C SWB
EJECT SW 16 R15 EJECT SW
17 K0 POS1
18 K1 POS2
19 K2 POS3
20 K3 POS4
ROTARY ENCODER INPUT
REC POWER CONTROL 21 O0 REC
EE POWER CONTROL 22 O1 EE
PB POWER CONTROL 23 O2 PB
AL POWER CONTROL 24 O3 AL
25 EX
26 X
X' TAL
RESET PULSE IN 27 RESET
REF PULSE IN 28 IRQ
29 TC
CLOCK IN 30 SC
DATA IN 31 SI
32 VSS
VCC 64
VM 63
START 62
IDL 5V
DM STOP P3 61 DRUM MOTOR CONTROL
STILL P2 60 STILL CONTROL (STILL: H)
VSC-1 P1 59
VSC-0 P0 58
CAPSTAN MOTOR TORQUE CONTROL
SWP E23 57 SW'ING PULSE
2/4/6 E22 56
2/4/6 E21 55
TAPE SPEED INPUT (PB MODE)
E20 54
REC 2/6 E19 53 TAPE SPEED CONTROL (REC MODE)
SERVO E18 52 SERVO CIRCUIT CONTROL
CM FWD E17 51 CAPSTAN MOTOR FORWARD CONTROL
M REV E16 50 CAPSTAN MOTOR REVERSE CONTROL
PAL/NT E15 49 PAL, NTSC MODE SELECT
TEST 1 E14 48
TEST 2 E13 47
3-HEAD E12 46 3-HEAD CONTROL
VFP E11 45 VIDEO FRONT PULSE
TV/VD E10 44 ANT SELECT
REC E9 43
PLAY E8 42
REW E7 41
TV/VD E6 40
SLP E5 39
SP E4 38
TIMER E3 37
FF E2 36
PAUSE E1 35
LED CONTROL
T-MUTE E0 34 TUNER MUTE CONTROL
S0 33 DATA OUT

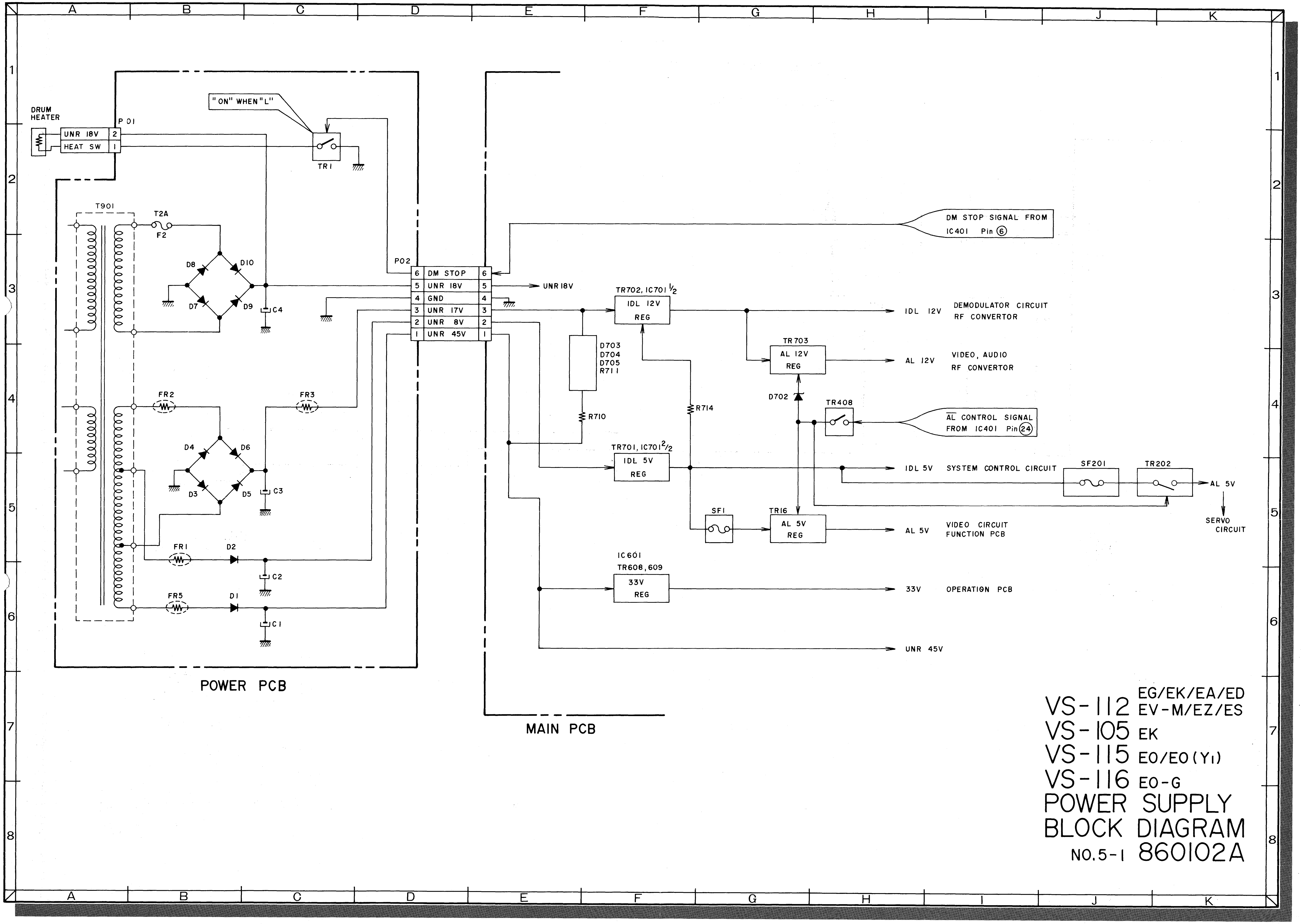
MB88521-135M

<table>
<tr><th>Pin No.</th><th>Port Name</th><th>I/O</th><th>Active</th><th>Description</th></tr>
<tr><td>1</td><td>VP</td><td>O</td><td>‾⊔‾</td><td>False V Sync Out on Trick Mode (CUE, REVIEW, STILL)</td></tr>
<tr><td>2</td><td>A–MUTE</td><td>O</td><td>H</td><td>Audio Mute Control</td></tr>
<tr><td>3</td><td>$\overline{2}$/6 NT</td><td>O</td><td>L/H</td><td>EQ SELECT CONTROL (NTSC ONLY) L : SP H : SLP</td></tr>
<tr><td>4</td><td>REC START</td><td>O</td><td>L</td><td>REC START CONTROL</td></tr>
<tr><td>5
6
7</td><td>LM6 (FWD)
LM5 (REV)
LM STP</td><td>O
O
O</td><td>L
L
L</td><td>LOADING MOTOR FORWARD CONTROL
LOADING MOTOR REVERSE CONTROL
LOADING MOTOR STOP CONTROL
<table>
<tr><th>TERMINAL / MODE</th><th>⑤ LM6 (FWD)</th><th>⑥ LM5 (REV)</th><th>⑦ LM STP</th></tr>
<tr><td>FWD</td><td>L</td><td>H</td><td>L</td></tr>
<tr><td>REV</td><td>H</td><td>L</td><td>L</td></tr>
<tr><td>STOP</td><td>H</td><td>H</td><td>H</td></tr>
</table></td></tr>
<tr><td>8</td><td>ROOM LAMP</td><td>O</td><td>H</td><td>ROOM LAMP CONTROL
PB, REC AND EJECT MODE: ROOM LAMP OFF</td></tr>
<tr><td>9</td><td>REC SF</td><td>I</td><td></td><td>REC SAFTY SW IN L : ACCEPT REC H : NOT ACCEPT REC</td></tr>
<tr><td>10</td><td>START S</td><td>I</td><td></td><td>START SENSOR IN</td></tr>
<tr><td>11</td><td>END S</td><td>I</td><td></td><td>END SENSOR IN</td></tr>
<tr><td>12</td><td>REEL PULSE</td><td>I</td><td>_⊓⊔⊓_</td><td>REEL PULSE IN</td></tr>
<tr><td>13</td><td>BRK DOWN</td><td>I</td><td></td><td>BRAKE DOWN IN L : BRAKE DOWN</td></tr>
<tr><td>14</td><td>C SW A</td><td>I</td><td></td><td>CASSETTE SW A H: CASSETTE IN</td></tr>
<tr><td>15</td><td>C SW B</td><td>I</td><td></td><td>CASSETTE SW B L : CASSETTE IN</td></tr>
<tr><td>16</td><td>EJECT SW</td><td>I</td><td></td><td>EJECT SW H: EJECT</td></tr>
<tr><td>17
18
19
20</td><td>POS 1
POS 2
POS 3
POS 4</td><td>I
I
I
I</td><td></td><td>ROTARY ENCODER DATA IN</td></tr>
<tr><td>21
22
23
24</td><td>REC
EE
PB
AL</td><td>O
O
O
O</td><td>L
L
L
L</td><td>REC POWER CONTROL
EE POWER CONTROL
PB POWER CONTROL
AL POWER CONTROL</td></tr>
<tr><td>25
26</td><td>EX
X</td><td></td><td></td><td>X’TAL</td></tr>
<tr><td>27</td><td>RESET</td><td>I</td><td>L</td><td>RESET PULSE IN</td></tr>
<tr><td>28</td><td>IRQ</td><td>I</td><td>‾⌊_</td><td>REF PULSE (of VP OUT) IN</td></tr>
<tr><td>29</td><td>TC</td><td></td><td></td><td>NC</td></tr>
<tr><td>30</td><td>SC</td><td>I</td><td>‾⊔⊓⊔‾</td><td>CLOCK IN</td></tr>
<tr><td>31</td><td>SI</td><td>I</td><td>‾⊔⊓⊔‾</td><td>DATA IN (FROM OPERATION MPU)</td></tr>
<tr><td>32</td><td>VSS</td><td></td><td></td><td>GND</td></tr>
<tr><td>33</td><td>SO</td><td>O</td><td>‾⊔⊓⊔‾</td><td>DATA OUT (TO OPERATION MPU)</td></tr>
<tr><td>34</td><td>T-MUTE</td><td>O</td><td>H</td><td>TUNER MUTE CONTROL</td></tr>
<tr><td>35</td><td>PAUSE</td><td>O</td><td>L</td><td>PAUSE LED CONTROL</td></tr>
<tr><td>36</td><td>FF</td><td>O</td><td>L</td><td>FF LED CONTROL</td></tr>
<tr><td>37</td><td>TIMER</td><td>O</td><td>L</td><td>TIMER LED CONTROL</td></tr>
<tr><td>38</td><td>SP</td><td>O</td><td>L</td><td>SP LED CONTROL</td></tr>
<tr><td>39</td><td>SLP</td><td>O</td><td>L</td><td>SLP LED CONTROL</td></tr>
<tr><td>40</td><td>TV/VD</td><td>O</td><td>L</td><td>TV/VIDEO LED CONTROL</td></tr>
<tr><td>41</td><td>REW</td><td>O</td><td>L</td><td>REW LED CONTROL</td></tr>
<tr><td>42</td><td>PLAY</td><td>O</td><td>L</td><td>PLAY LED CONTROL</td></tr>
<tr><td>43</td><td>REC</td><td>O</td><td>L</td><td>REC LED CONTROL</td></tr>
<tr><td>44</td><td>TV/VD</td><td>O</td><td>L/H</td><td>ANT SELECT CONTROL H : TV L : VIDEO</td></tr>
<tr><td>45</td><td>VFP</td><td>O</td><td>L</td><td>VIDEO FRONT PULSE</td></tr>
<tr><td>46</td><td>3-HEAD</td><td>I</td><td>L</td><td>(3-HEAD MODEL ONLY)</td></tr>
<tr><td>47</td><td>TEST 1</td><td>I</td><td>L</td><td></td></tr>
<tr><td>48</td><td>TEST 2</td><td>I</td><td>L</td><td></td></tr>
</table>

<table>
<tr><th>Pin No.</th><th>Port Name</th><th>I/O</th><th>Active</th><th>Description</th></tr>
<tr><td>49</td><td>PAL/$\overline{\text{NT}}$</td><td>I</td><td>H/L</td><td>PAL, NTSC SELECT H: PAL L: NTSC</td></tr>
<tr><td>50
51</td><td>CM REV
CM FWD</td><td>O
O</td><td>L
L</td><td>CAPSTAN MOTOR REVERSE CONTROL
CAPSTAN MOTOR FORWARD CONTROL
<table>
<tr><th>MODE \ TERMINAL</th><th>(51)
CM DWD</th><th>(50)
CM REV</th></tr>
<tr><td>FWD</td><td>L</td><td>H</td></tr>
<tr><td>REV</td><td>H</td><td>L</td></tr>
<tr><td>STOP</td><td>H</td><td>H</td></tr>
</table></td></tr>
<tr><td>52</td><td>SERVO</td><td>O</td><td>L</td><td>SERVO CIRCUIT CONTROL</td></tr>
<tr><td>53</td><td>REC $2/\overline{6}$</td><td>O</td><td>H/L</td><td>TAPE SPEED CONTROL (REC MODE) H: SP L: SLP</td></tr>
<tr><td>54</td><td></td><td></td><td></td><td>NC</td></tr>
<tr><td>55
56</td><td>$\overline{2}/4/6$
$\overline{2}/\overline{4}/6$</td><td>I
I</td><td></td><td>TAPE SPEED CONTROL (PB MODE)
<table>
<tr><th>TAPE SPEED \ TERMINAL</th><th>(55)
$\overline{2}/4/6$</th><th>(56)
$\overline{2}/\overline{4}/6$</th></tr>
<tr><td>SP</td><td>L</td><td>L</td></tr>
<tr><td>LP</td><td>H</td><td>L</td></tr>
<tr><td>SLP</td><td>H</td><td>H</td></tr>
</table></td></tr>
<tr><td>57</td><td>SWP</td><td>I</td><td>⎍</td><td>SWITCHING PULSE IN</td></tr>
<tr><td>58
59</td><td>VSC-0
VSC-1</td><td>O
O</td><td>H/L
H/L</td><td>CAPSTAN MOTOR TORQUE CONTROL
<table>
<tr><th>MODE \ CONTROL</th><th>VSC-0</th><th>VSC-1</th><th>SERVO</th><th>CM FWD</th><th>CM REV</th></tr>
<tr><td>PLAY</td><td>H</td><td>L</td><td>L</td><td>L</td><td>H</td></tr>
<tr><td>CUE</td><td>H</td><td>H</td><td>L</td><td>L</td><td>H</td></tr>
<tr><td>REVIEW</td><td>H</td><td>H</td><td>L</td><td>H</td><td>L</td></tr>
<tr><td>STILL</td><td>H</td><td>H</td><td>H</td><td>H</td><td>H</td></tr>
<tr><td>FF</td><td>H</td><td>H</td><td>H</td><td>L</td><td>H</td></tr>
<tr><td>REW</td><td>H</td><td>H</td><td>H</td><td>H</td><td>L</td></tr>
</table></td></tr>
<tr><td>60
61</td><td>STILL
DM STP</td><td>O
O</td><td>H
L</td><td>STILL CONTROL STILL: H
DRUM MOTOR CONTROL</td></tr>
<tr><td>62
63
64</td><td>START
VM
VCC</td><td></td><td></td><td>+5V</td></tr>
</table>

TC9018P (TV SYNC GENERATOR)

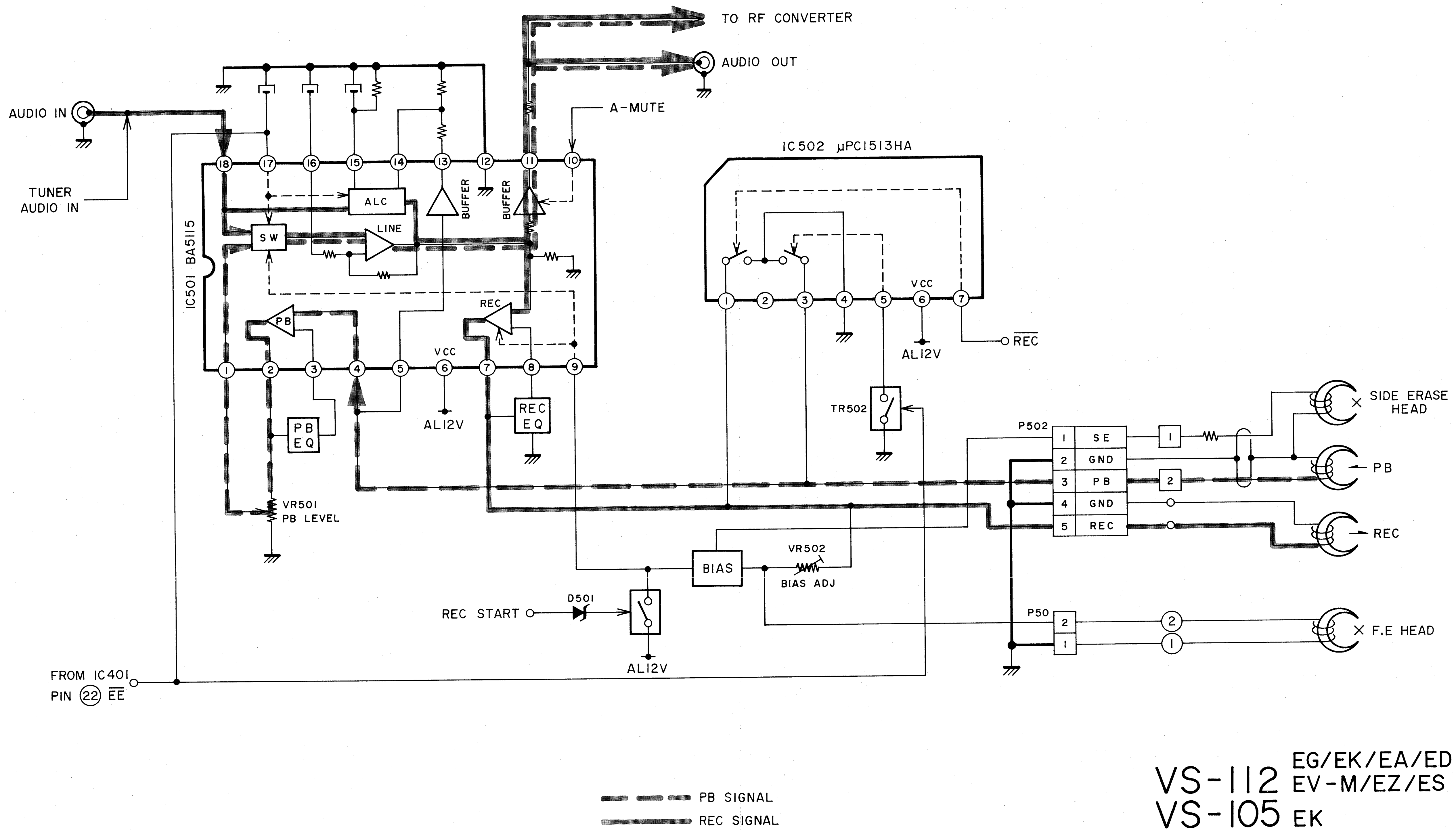

Vss (1) Vss
CSC1 (2)
CSC2 (3)
H-RST (4)
V-RST (5)
NTSC/PAL (6)
PAL-RST (7)
1/5 1/6 N P
1/114 1/141 N P
H SHIFT REGISTER
COMPOSITE DECODER
V SHIFT REGISTER
2fH
1/525 1/625 N P
fV
HR
LATCH
3.6M-N 4.4M-P
VR
LATCH
3.6M-N 4.4M-P
VDD (14) VDD
(13) HD
(12) BF
(11) VS
(10) C-SY
(9) EXTC-SY
(8) INT/$\overline{\text{EXT}}$


A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
DRUM HEATER
P 01
UNR 18V
HEAT SW
2
1
"ON" WHEN "L"
TR1
T901
T2A
F2
D8
D10
D7
D9
C4
P02
6 DM STOP 6
5 UNR 18V 5
4 GND 4
3 UNR 17V 3
2 UNR 8V 2
1 UNR 45V 1
FR2
FR3
D4
D6
D3
D5
C3
FR1
D2
C2
FR5
D1
C1
POWER PCB
MAIN PCB
UNR 18V
DM STOP SIGNAL FROM IC401 Pin ⑥
TR702, IC701 1/2
IDL 12V REG
IDL 12V
DEMODULATOR CIRCUIT
RF CONVERTOR
TR703
AL 12V REG
AL 12V
VIDEO, AUDIO
RF CONVERTOR
D703
D704
D705
R711
R710
R714
D702
TR408
AL CONTROL SIGNAL FROM IC401 Pin ㉔
TR701, IC701 2/2
IDL 5V REG
IDL 5V
SYSTEM CONTROL CIRCUIT
SF201
TR202
AL 5V
SERVO CIRCUIT
SF1
TR16
AL 5V REG
AL 5V
VIDEO CIRCUIT
FUNCTION PCB
IC601
TR608, 609
33V REG
33V
OPERATION PCB
UNR 45V

VS-112 EG/EK/EA/ED
EV-M/EZ/ES
VS-105 EK
VS-115 EO/EO(Y1)
VS-116 EO-G

POWER SUPPLY
BLOCK DIAGRAM

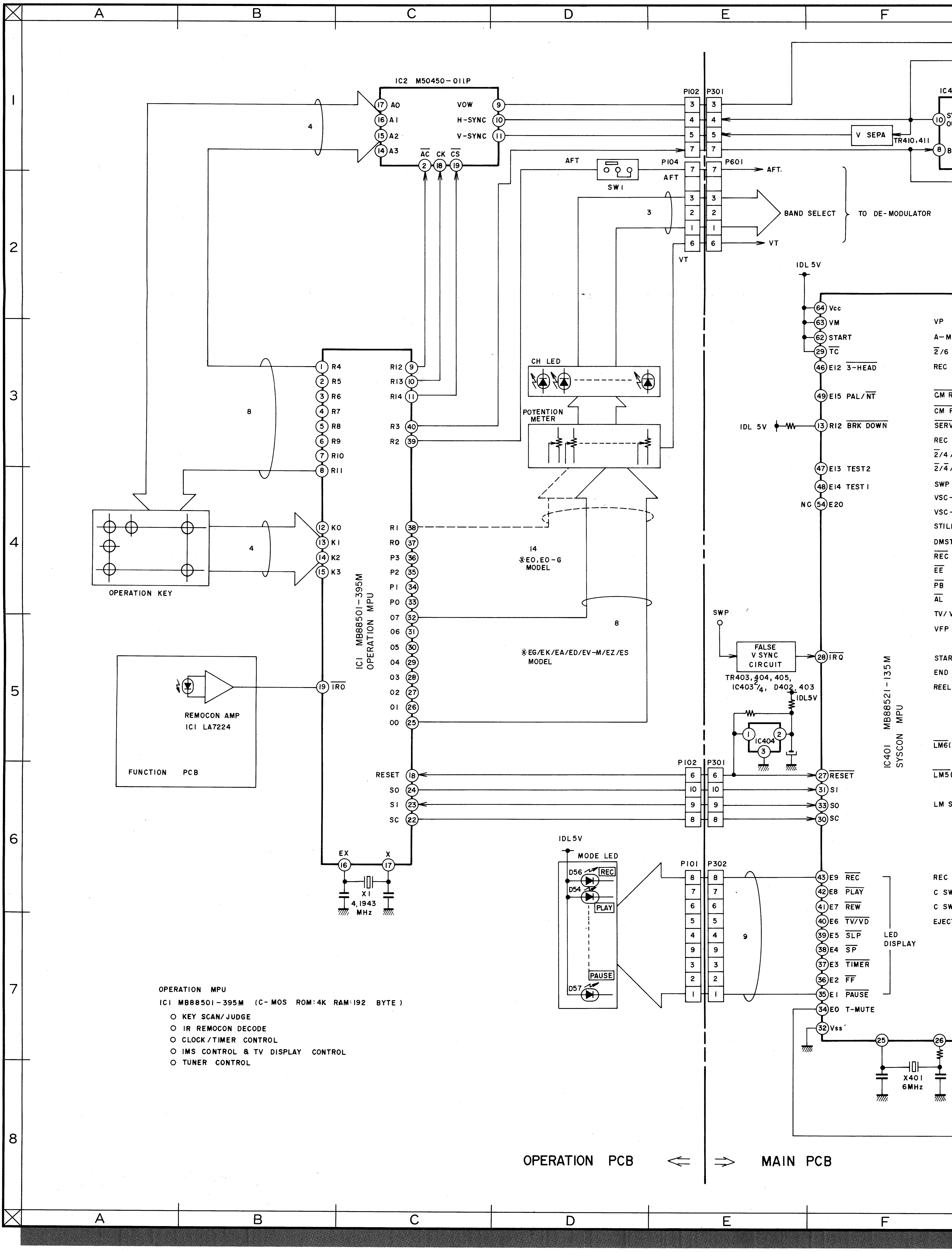
NO.5-1 860102A


TO RF CONVERTER
AUDIO OUT
AUDIO IN
A-MUTE
TUNER AUDIO IN
IC502 μPC1513HA
IC501 BA5115
ALC
BUFFER
BUFFER
SW
LINE
REC
PB
VCC
AL12V
PB EQ
REC EQ
VR501 PB LEVEL
VCC
AL12V
REC
TR502
P502
SE
GND
PB
GND
REC
SIDE ERASE HEAD
PB
REC
BIAS
VR502
BIAS ADJ
REC START
D501
AL12V
P50
F.E HEAD
FROM IC401 PIN ㉒ EE
PB SIGNAL
REC SIGNAL

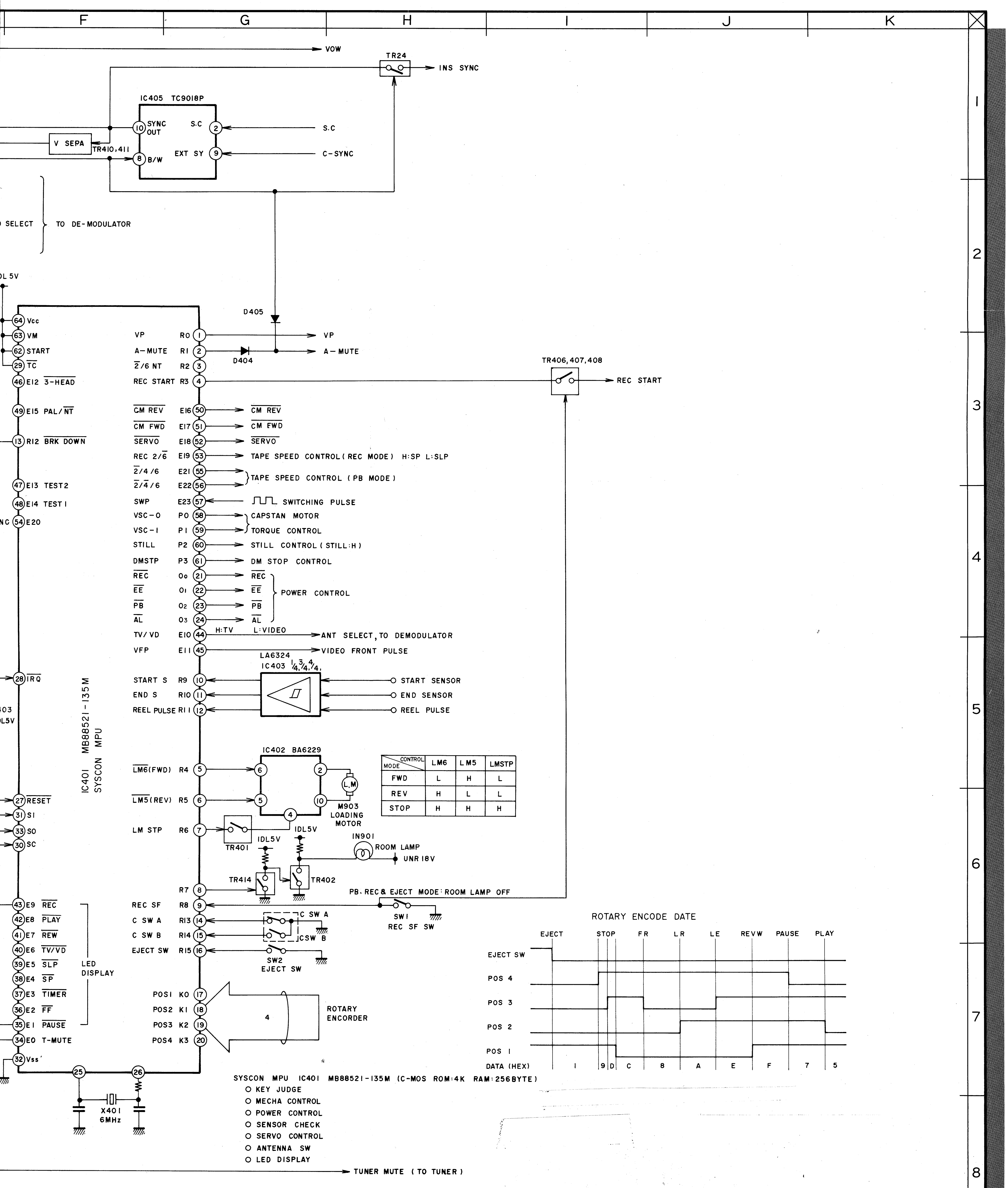
VS-112 EG/EK/EA/ED EV-M/EZ/ES
VS-105 EK
VS-115 EO/EO(Y1)
VS-116 EO-G

AUDIO BLOCK DIAGRAM

NO.5-2 860103A (A3)
2


A
B
C
D
E
F
1
2
3
4
5
6
7
8
IC2 M50450-011P
17 A0
16 A1
15 A2
14 A3
VOW 9
H-SYNC 10
V-SYNC 11
AC 2
CK 18
CS 19
4
8
4
3
8
14
9
P102
P301
P104
P601
AFT
SW1
AFT.
BAND SELECT
TO DE-MODULATOR
VT
V SEPA
TR410,411
IC4
IDL 5V
CH LED
POTENTION METER
OPERATION KEY
IC1 MB88501-395M
OPERATION MPU
1 R4
2 R5
3 R6
4 R7
5 R8
6 R9
7 R10
8 R11
12 K0
13 K1
14 K2
15 K3
19 IRO
R12 9
R13 10
R14 11
R3 40
R2 39
R1 38
R0 37
P3 36
P2 35
P1 34
P0 33
07 32
06 31
05 30
04 29
03 28
02 27
01 26
00 25
RESET 18
SO 24
SI 23
SC 22
EX 16
X 17
X1
4.1943 MHz
※E0, E0-G MODEL
※EG/EK/EA/ED/EV-M/EZ/ES MODEL
REMOCON AMP
IC1 LA7224
FUNCTION PCB
IDL5V
MODE LED
D56
REC
D54
PLAY
PAUSE
D57
P101
P302
SWP
FALSE V SYNC CIRCUIT
TR403, 404, 405, IC403 2/4, D402, 403
IDL5V
IC404
64 Vcc
63 VM
62 START
29 TC
46 E12 3-HEAD
49 E15 PAL/NT
IDL 5V
13 R12 BRK DOWN
47 E13 TEST2
48 E14 TEST1
NC 54 E20
28 IRQ
27 RESET
31 SI
33 SO
30 SC
43 E9 REC
42 E8 PLAY
41 E7 REW
40 E6 TV/VD
39 E5 SLP
38 E4 SP
37 E3 TIMER
36 E2 FF
35 E1 PAUSE
34 E0 T-MUTE
32 Vss
LED DISPLAY
25
26
X401
6MHz
IC401 MB88521-135M
SYSCON MPU
VP
A-M
2/6
REC
CM R
CM F
SERV
REC
2/4
2/4
SWP
VSC-
VSC-
STILL
DMST
REC
EE
PB
AL
TV/V
VFP
STAR
END
REEL
LM6
LM5
LM S
REC
C SW
C SW
EJECT
OPERATION PCB
MAIN PCB

OPERATION MPU
IC1 MB88501-395M (C-MOS ROM:4K RAM:192 BYTE)
- O KEY SCAN/JUDGE
- O IR REMOCON DECODE
- O CLOCK/TIMER CONTROL
- O IMS CONTROL & TV DISPLAY CONTROL
- O TUNER CONTROL

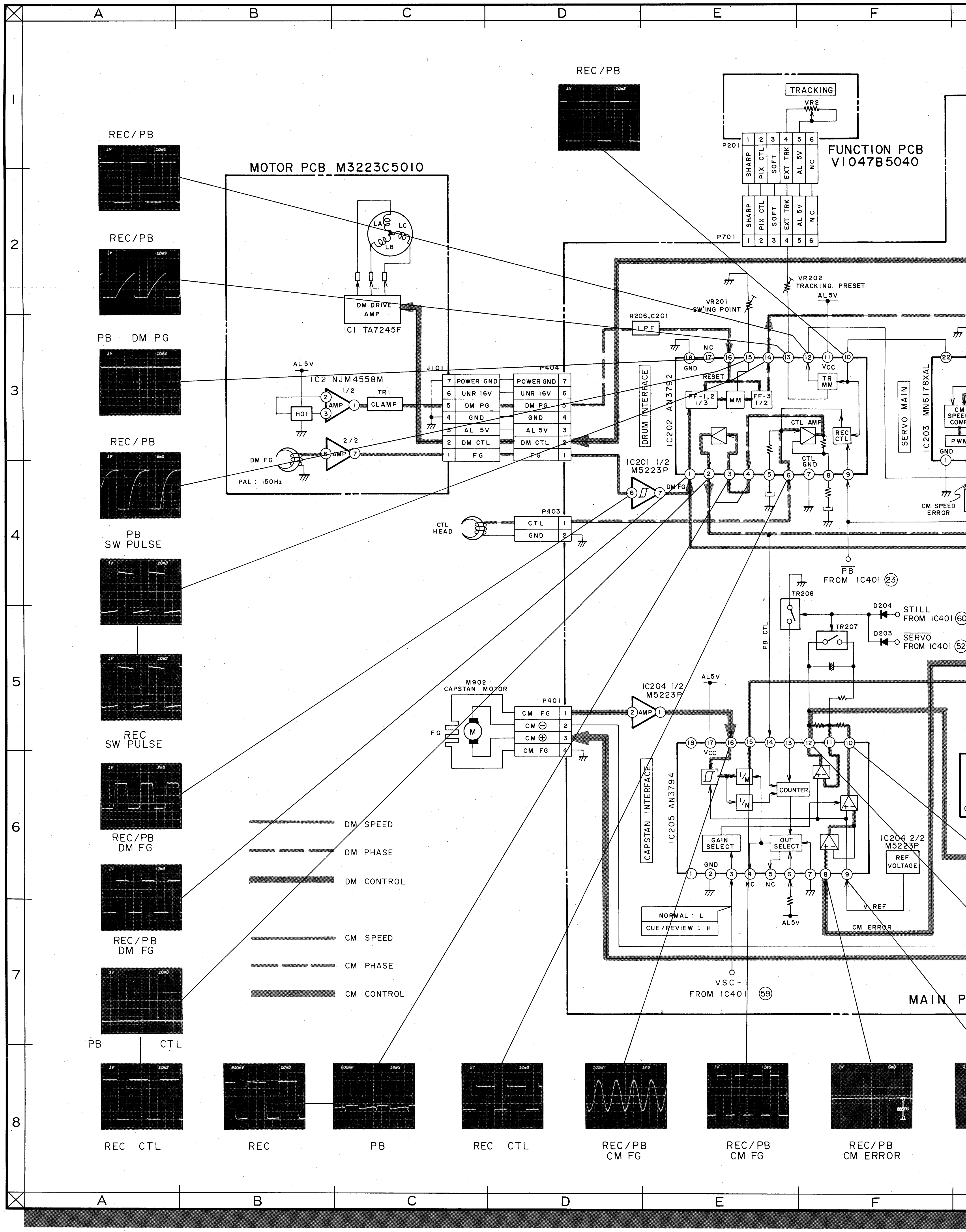

VOW
TR24
INS SYNC
IC405 TC9018P
SYNC OUT
S.C
EXT SY
B/W
V SEPA
TR410,411
S.C
C-SYNC
SELECT
TO DE-MODULATOR
DL 5V
D405
D404
VP
A-MUTE
TR406,407,408
REC START
Vcc
VM
START
TC
E12 3-HEAD
E15 PAL/NT
R12 BRK DOWN
E13 TEST2
E14 TEST1
E20
IRQ
RESET
SI
SO
SC
E9 REC
E8 PLAY
E7 REW
E6 TV/VD
E5 SLP
E4 SP
E3 TIMER
E2 FF
E1 PAUSE
E0 T-MUTE
Vss'
LED DISPLAY
IC401 MB88521-135M
SYSCON MPU
VP R0
A-MUTE R1
2/6 NT R2
REC START R3
CM REV E16
CM FWD E17
SERVO E18
REC 2/6 E19
2/4/6 E21
2/4/6 E22
SWP E23
VSC-0 P0
VSC-1 P1
STILL P2
DMSTP P3
REC O0
EE O1
PB O2
AL O3
TV/VD E10
VFP E11
CM REV
CM FWD
SERVO
TAPE SPEED CONTROL (REC MODE) H:SP L:SLP
TAPE SPEED CONTROL (PB MODE)
SWITCHING PULSE
CAPSTAN MOTOR
TORQUE CONTROL
STILL CONTROL (STILL:H)
DM STOP CONTROL
REC
EE
PB
AL
POWER CONTROL
H:TV L:VIDEO
ANT SELECT, TO DEMODULATOR
VIDEO FRONT PULSE
LA6324
IC403 1/4,3/4,4/4,
START S R9
END S R10
REEL PULSE R11
START SENSOR
END SENSOR
REEL PULSE
IC402 BA6229
LM6(FWD) R4
LM5(REV) R5
LM STP R6
L.M
M903 LOADING MOTOR
TR401
IDL5V
IDL5V
IN901
ROOM LAMP
UNR 18V
TR414
TR402
R7
PB.REC & EJECT MODE: ROOM LAMP OFF
REC SF R8
C SW A R13
C SW B R14
EJECT SW R15
C SW A
CSW B
SW1
REC SF SW
SW2
EJECT SW
POS1 K0
POS2 K1
POS3 K2
POS4 K3
4
ROTARY ENCORDER
X401
6MHz
ROTARY ENCODE DATE
EJECT
STOP
FR
LR
LE
REVW
PAUSE
PLAY
EJECT SW
POS 4
POS 3
POS 2
POS 1
DATA (HEX)
1
9
D
C
8
A
E
F
7
5
TUNER MUTE (TO TUNER)
PCB
F
G
H
I
J
K
1
2
3
4
5
6
7
8

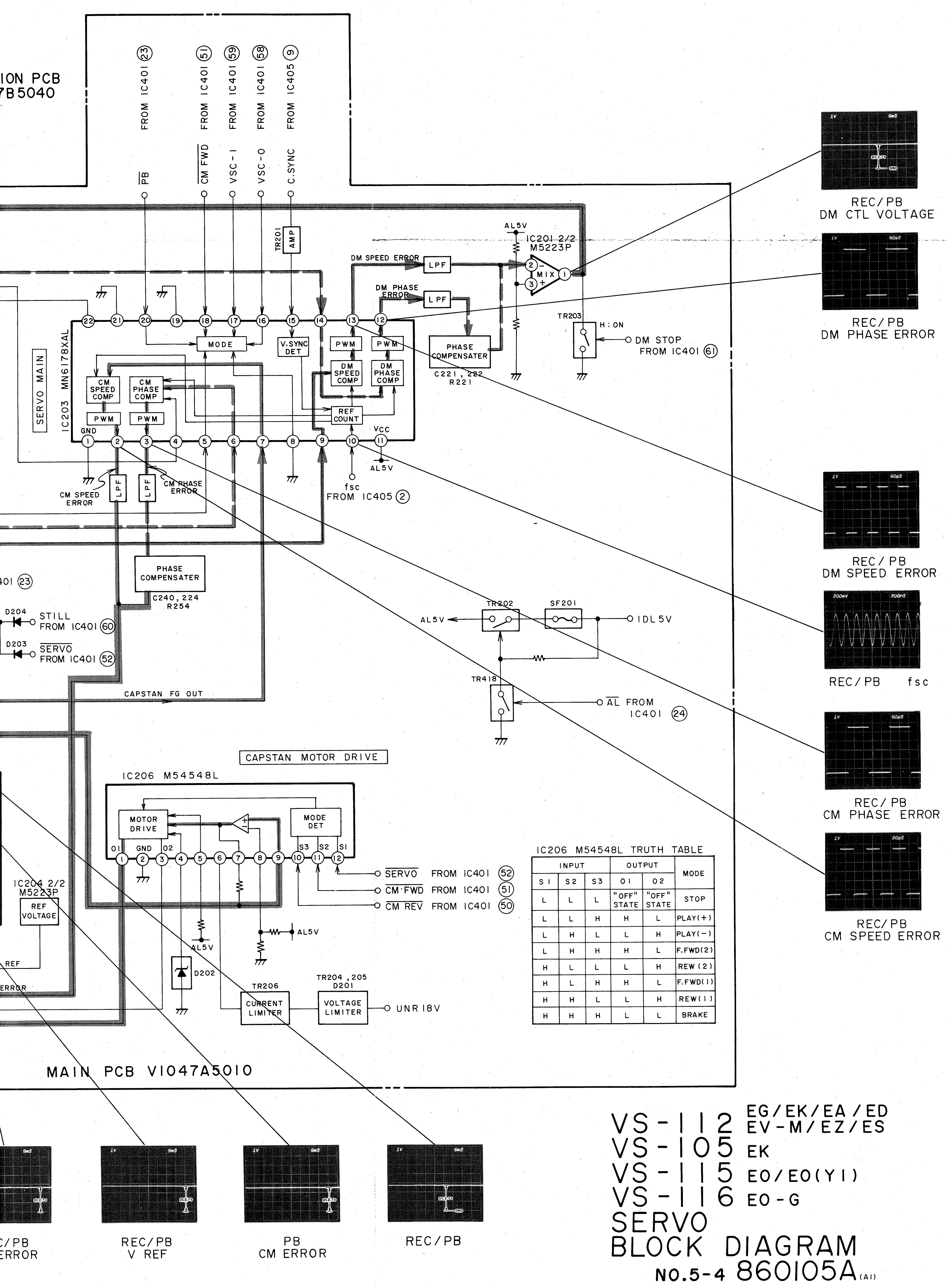
MODE \ CONTROL	LM6	LM5	LMSTP
FWD	L	H	L
REV	H	L	L
STOP	H	H	H

SYSCON MPU IC401 MB88521-135M (C-MOS ROM:4K RAM:256BYTE)

- ○ KEY JUDGE
- ○ MECHA CONTROL
- ○ POWER CONTROL
- ○ SENSOR CHECK
- ○ SERVO CONTROL
- ○ ANTENNA SW
- ○ LED DISPLAY

SYSTEM BLOCK DIAGRAM
NO. 5-3 860104A

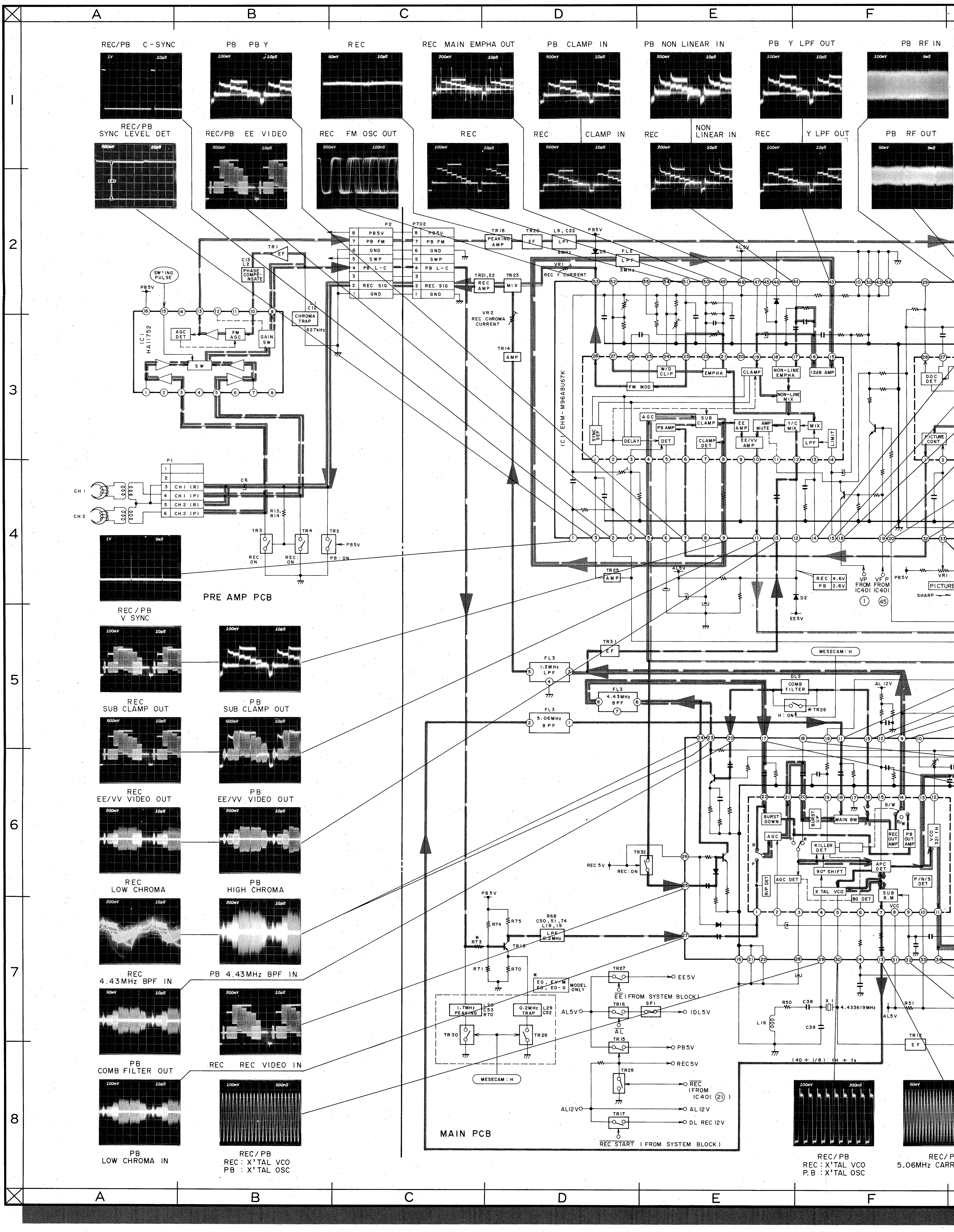

MOTOR PCB M3223C5010
FUNCTION PCB V1047B5040
TRACKING
VR2
P201
P701
SHARP
PIX CTL
SOFT
EXT TRK
AL 5V
NC
REC/PB
PB DM PG
PB SW PULSE
REC SW PULSE
REC/PB DM FG
PB
CTL
REC CTL
REC
REC/PB CM FG
REC/PB CM ERROR
LA
LB
LC
DM DRIVE AMP
IC1 TA7245F
AL5V
IC2 NJM4558M
1/2
2/2
AMP
TR1
CLAMP
HO1
DM FG
PAL : 150Hz
J101
P404
POWER GND
UNR 16V
DM PG
GND
AL 5V
DM CTL
FG
R206,C201
LPF
VR201
SW'ING POINT
VR202
TRACKING PRESET
NC
RESET
VCC
TR MM
FF-1,2 1/3
MM
FF-3 1/2
CTL AMP
REC CTL
CTL GND
DRUM INTERFACE
IC202 AN3792
IC201 1/2 M5223P
SERVO MAIN
IC203 MN6178XAL
CM SPEED COMP
PWM
CM SPEED ERROR
CTL HEAD
P403
CTL
PB FROM IC401 ㉓
TR208
TR207
D204
D203
STILL FROM IC401 (60)
SERVO FROM IC401 (52)
PB CTL
M902 CAPSTAN MOTOR
FG
M
P401
CM FG
CM ⊖
CM ⊕
IC204 1/2 M5223P
CAPSTAN INTERFACE
IC205 AN3794
COUNTER
GAIN SELECT
OUT SELECT
1/M
1/N
IC204 2/2 M5223P
REF VOLTAGE
V REF
CM ERROR
NORMAL : L
CUE/REVIEW : H
VSC-1 FROM IC401 ㊾
MAIN P
DM SPEED
DM PHASE
DM CONTROL
CM SPEED
CM PHASE
CM CONTROL
1V
10mS
2mS
5mS
500mV
100mV
1mS
A
B
C
D
E
F
1
2
3
4
5
6
7
8

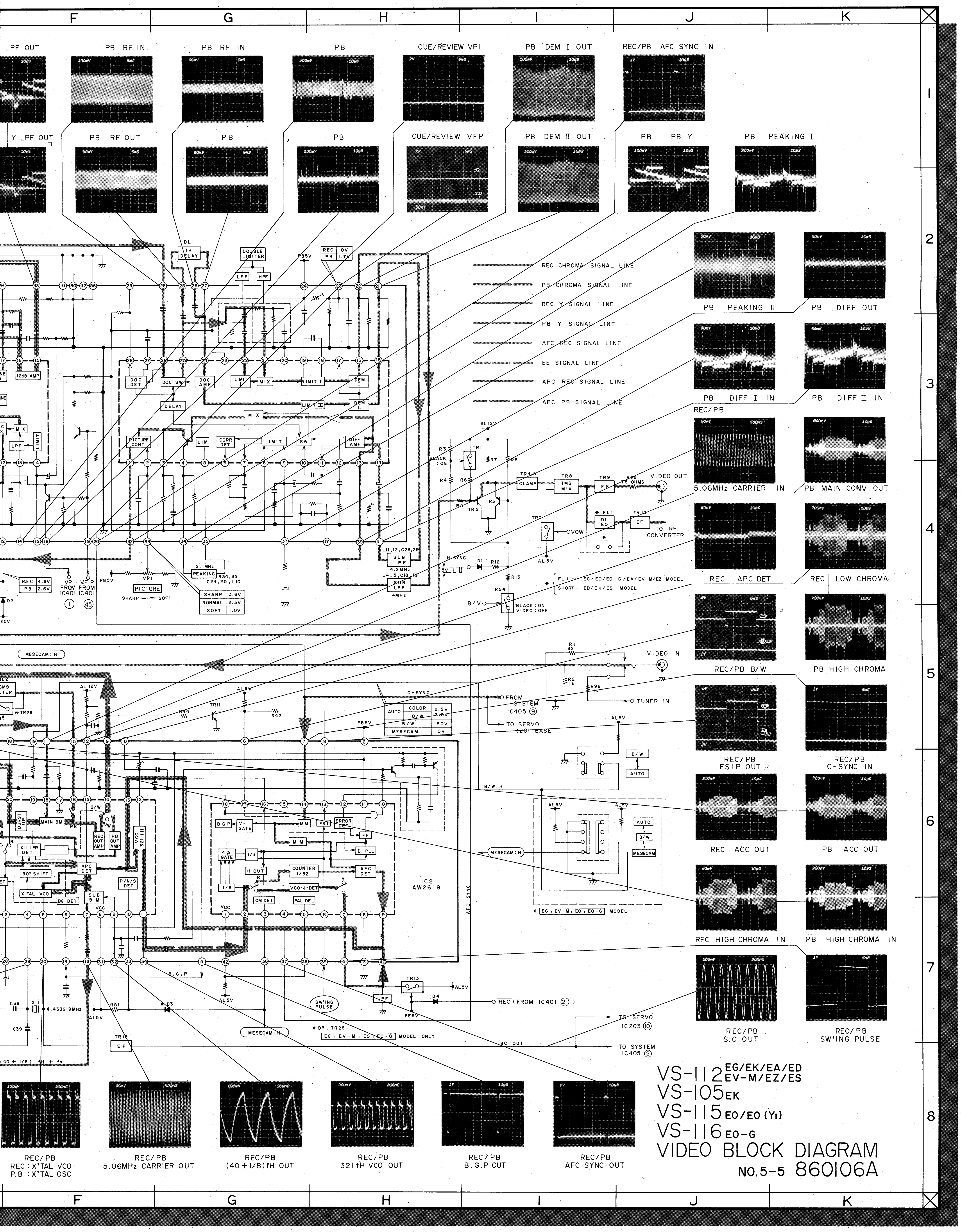

ION PCB
7B5040
PB FROM IC401 ㉓
CM FWD FROM IC401 (51)
VSC-I FROM IC401 (59)
VSC-O FROM IC401 (58)
C.SYNC FROM IC405 ⑨
TR201 AMP
SERVO MAIN
IC203 MN6178XAL
GND
CM SPEED COMP
CM PHASE COMP
PWM
MODE
V.SYNC DET
DM SPEED COMP
DM PHASE COMP
REF COUNT
VCC
AL5V
fsc FROM IC405 ②
CM SPEED ERROR
CM PHASE ERROR
LPF
PHASE COMPENSATER
C240, 224
R254
DM SPEED ERROR
DM PHASE ERROR
PHASE COMPENSATER
C221, 222
R221
IC201 2/2
M5223P
MIX
TR203
H : ON
DM STOP FROM IC401 (61)
D204 STILL FROM IC401 (60)
D203 SERVO FROM IC401 (52)
IC401 ㉓
CAPSTAN FG OUT
TR202
SF201
AL5V
IDL5V
TR418
AL FROM IC401 ㉔
CAPSTAN MOTOR DRIVE
IC206 M54548L
MOTOR DRIVE
MODE DET
O1 GND O2
S3 S2 S1
SERVO FROM IC401 (52)
CM·FWD FROM IC401 (51)
CM REV FROM IC401 (50)
IC204 2/2
M5223P
REF VOLTAGE
REF
ERROR
D202
AL5V
TR206
CURRENT LIMITER
TR204, 205
D201
VOLTAGE LIMITER
UNR 18V
MAIN PCB V1047A5010
REC/PB
DM CTL VOLTAGE
REC/PB
DM PHASE ERROR
REC/PB
DM SPEED ERROR
REC/PB fsc
REC/PB
CM PHASE ERROR
REC/PB
CM SPEED ERROR
C/PB
ERROR
REC/PB
V REF
PB
CM ERROR
REC/PB
1V
5mS
50μS
20μS
200mV
200nS

IC206 M54548L TRUTH TABLE

INPUT			OUTPUT		MODE
S1	S2	S3	O1	O2	
L	L	L	"OFF" STATE	"OFF" STATE	STOP
L	L	H	H	L	PLAY(+)
L	H	L	L	H	PLAY(−)
L	H	H	H	L	F.FWD(2)
H	L	L	L	H	REW (2)
H	L	H	H	L	F.FWD(1)
H	H	L	L	H	REW(1)
H	H	H	L	L	BRAKE

VS-112 EG/EK/EA/ED EV-M/EZ/ES
VS-105 EK
VS-115 EO/EO(Y1)
VS-116 EO-G
SERVO
BLOCK DIAGRAM
NO.5-4 860105A(A1)

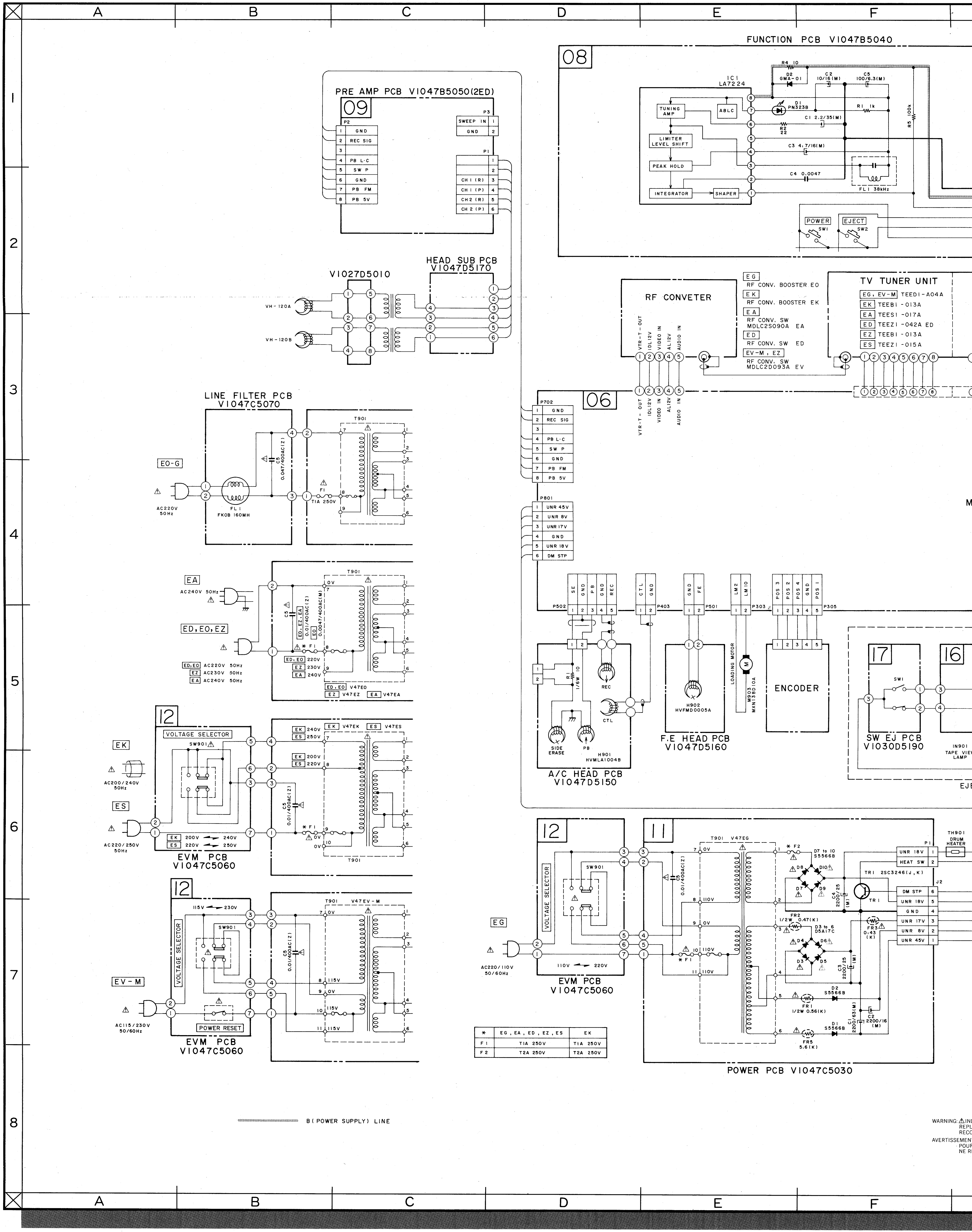

A
B
C
D
E
F
1
2
3
4
5
6
7
8
REC/PB C-SYNC
PB PB Y
REC
REC MAIN EMPHA OUT
PB CLAMP IN
PB NON LINEAR IN
PB Y LPF OUT
PB RF IN
REC/PB SYNC LEVEL DET
REC/PB EE VIDEO
REC FM OSC OUT
REC
REC CLAMP IN
REC NON LINEAR IN
REC Y LPF OUT
PB RF OUT
REC/PB V SYNC
PRE AMP PCB
REC SUB CLAMP OUT
PB SUB CLAMP OUT
REC EE/VV VIDEO OUT
PB EE/VV VIDEO OUT
REC LOW CHROMA
PB HIGH CHROMA
REC 4.43MHz BPF IN
PB 4.43MHz BPF IN
PB COMB FILTER OUT
REC REC VIDEO IN
PB LOW CHROMA IN
REC/PB REC : X'TAL VCO PB : X'TAL OSC
REC/PB REC : X'TAL VCO P.B : X'TAL OSC
REC/P 5.06MHz CARR
SW'ING PULSE
PB5V
IC1 HA11752
AGC DET
FM AGC
GAIN SW
SW
TR1 EF
C13 L2 PHASE COMPENSATE
C12 L1 CHROMA TRAP 627kHz
P2
P702
8 PB5V
7 PB FM
6 GND
5 SWP
4 PB L-C
3
2 REC SIG
1 GND
P1
3 CH1 (R)
4 CH1 (P)
5 CH2 (R)
6 CH2 (P)
CH1
CH2
C6
R13, R14
TR3
TR4
TR2
REC : ON
PB : ON
TR18 PEAKING AMP
TR20 EF
L9, C22 LPF 8MHz
D5
FL2 LPF 3MHz
TR21, 22 REC AMP
TR23 MIX
VR1 REC Y CURRENT
VR2 REC CHROMA CURRENT
TR14 AMP
AL5V
IC1 EHM-M96A8U67K
W/D CLIP
EMPHA
CLAMP
NON-LINE EMPHA
12dB AMP
FM MOD
NON-LINE MIX
AGC
SUB CLAMP
PB AMP
EE AMP
AMP MUTE
Y/C MIX
MIX
SYNC SEP
DELAY
DET
CLAMP DET
EE/VV AMP
LPF
LIMIT
DOC DET
PICTURE CONT
TR25 AMP
REC 4.6V
PB 2.6V
VP FROM IC401 ①
VF P FROM IC401 ㊺
D2
EE5V
VR1
PICTURE
SHARP
TR31 EF
MESECAM : H
FL3 1.2MHz LPF
FL3 4.43MHz BPF
FL3 5.06MHz BPF
DL2 COMB FILTER
*TR26
H : ON
AL 12V
BURST DOWN
AGC
BURST UP
MAIN BM
B/W
PB
REC OUT AMP
PB OUT AMP
VCO 321 fH
KILLER DET
90° SHIFT
APC DET
P/N/S DET
R/P DET
AGC DET
X TAL VCO
BG DET
SUB B.M
VCC
REC 5V
TR32
REC : ON
PB5V
R74
R75
*R73
TR16
R71
R70
R68 C50, 51, 74 L18, 19 LPF 0.2MHz
*EG, EV-M EO, EO-G MODEL ONLY
1.7MHz PEAKING
L20 C53 R70
0.2MHz TRAP
L29 C52
TR30
TR29
MESECAM : H
TR27
EE5V
EE (FROM SYSTEM BLOCK)
AL5V
TR16
SF1
IDL5V
AL
TR15
PB5V
REC5V
TR28
REC (FROM IC401 ㉑)
AL12V
AL 12V
TR17
DL REC 12V
REC START (FROM SYSTEM BLOCK)
MAIN PCB
R50
C38
X1
4.433619MHz
L16
C39
R51
TR12 EF
(40 + 1/8) fH + fs

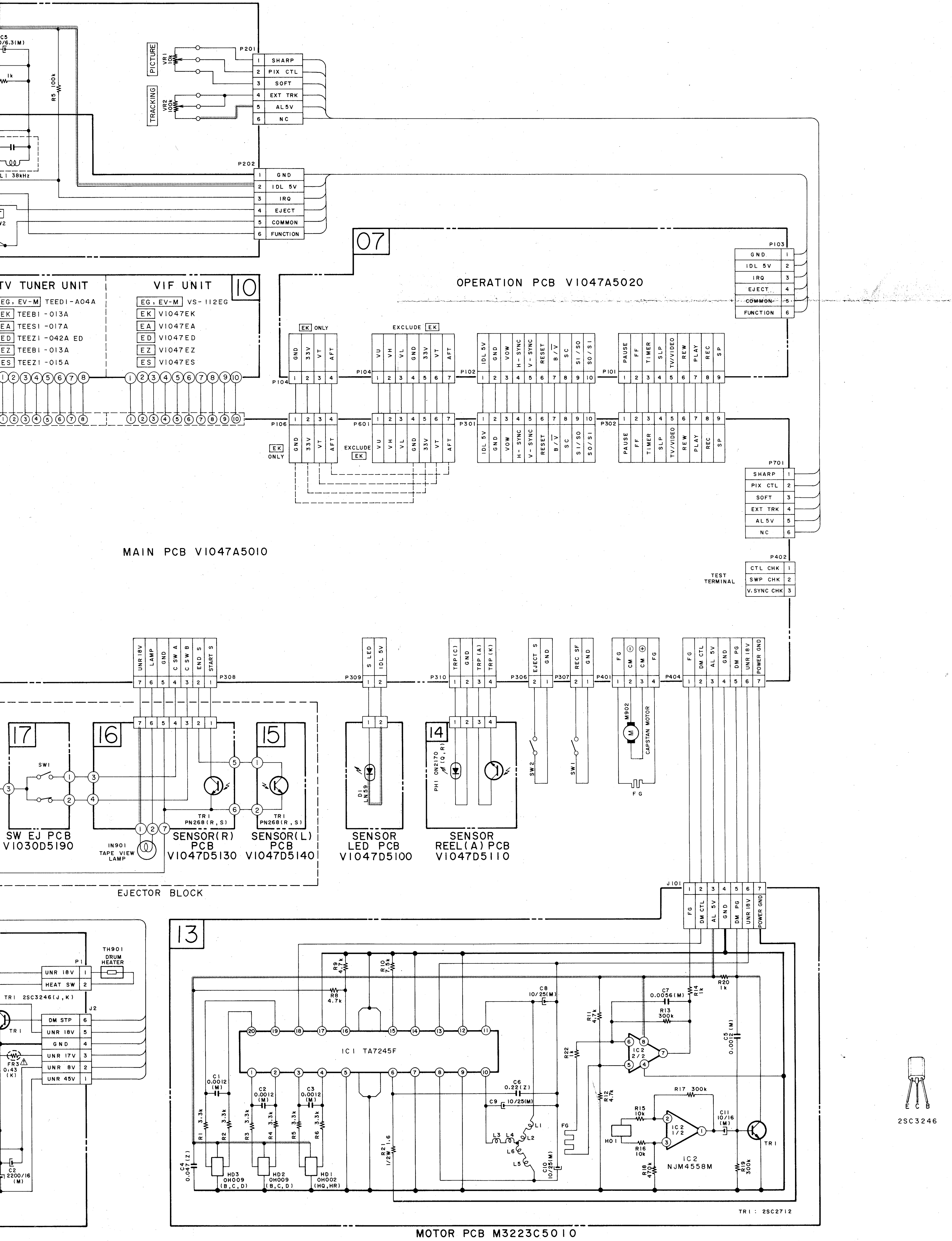

LPF OUT
PB RF IN
PB RF IN
PB
CUE/REVIEW VPI
PB DEM I OUT
REC/PB AFC SYNC IN
Y LPF OUT
PB RF OUT
PB
PB
CUE/REVIEW VFP
PB DEM II OUT
PB PB Y
PB PEAKING I
PB PEAKING II
PB DIFF OUT
PB DIFF I IN
PB DIFF II IN
REC/PB
5.06MHz CARRIER IN
PB MAIN CONV OUT
REC APC DET
REC LOW CHROMA
REC/PB B/W
PB HIGH CHROMA
REC/PB FSIP OUT
REC/PB C-SYNC IN
REC ACC OUT
PB ACC OUT
REC HIGH CHROMA IN
PB HIGH CHROMA IN
REC/PB S.C OUT
REC/PB SW'ING PULSE
REC/PB REC : X'TAL VCO P.B : X'TAL OSC
REC/PB 5.06MHz CARRIER OUT
REC/PB (40 + 1/8)fH OUT
REC/PB 321fH VCO OUT
REC/PB B.G.P OUT
REC/PB AFC SYNC OUT
REC CHROMA SIGNAL LINE
PB CHROMA SIGNAL LINE
REC Y SIGNAL LINE
PB Y SIGNAL LINE
AFC REC SIGNAL LINE
EE SIGNAL LINE
APC REC SIGNAL LINE
APC PB SIGNAL LINE
DL1 1H DELAY
DOUBLE LIMITER
LPF
HPF
REC 0V
PB 1.7V
DOC DET
DOC SW
DOC AMP
LIMIT I
MIX
LIMIT II
DEM I
DELAY
LIMIT III
DEM II
PICTURE CONT
LIM
CORR DET
LIMIT
SW
DIFF AMP
12dB AMP
VIDEO OUT
75 OHMS
CLAMP
IMS MIX
EF
TO RF CONVERTER
* FL1 DL EQ
BLACK : ON
VIDEO : OFF
* FL1 -- EG/EO/EO-G/EA/EV-M/EZ MODEL
SHORT -- ED/EK/ES MODEL
2.1MHz PEAKING
R34,35 C24,25, L10
SHARP 3.6V
NORMAL 2.3V
SOFT 1.0V
PICTURE
SHARP —— SOFT
SUB LPF 4.2MHz
S&B LPF 4MHz
REC 4.6V
PB 2.6V
VP FROM IC401 ①
VF P FROM IC401 ㊺
VIDEO IN
TUNER IN
FROM SYSTEM IC405 ⑨
TO SERVO TR201 BASE
C-SYNC
AUTO COLOR 2.5V 3.0V
B/W 5.0V
MESECAM 0V
MESECAM : H
B/W : H
IC2 AW2619
AFC SYNC
B G P
V-GATE
MM
FSI
ERROR DET
FF
D-PLL
M.M
4Φ GATE
1/4
H OUT
COUNTER 1/321
AFC DET
1/8
CM DET
VCO-J-DET
PAL DEL
BURST UP
MAIN BM
KILLER DET
REC OUT AMP
PB OUT AMP
VCO 321 fH
APC DET
90° SHIFT
P/N/S DET
X TAL VCO
BG DET
SUB B.M
B.G.P
SW'ING PULSE
* D3, TR26
EG, EV-M, EO, EO-G MODEL ONLY
REC (FROM IC401 ㉑)
TO SERVO IC203 ⑩
TO SYSTEM IC405 ②
SC OUT
4.433619MHz
(40 + 1/8) fH + fs
* EG, EV-M, EO, EO-G MODEL
AUTO
B/W
MESECAM

VS-112 EG/EK/EA/ED EV-M/EZ/ES
VS-105 EK
VS-115 EO/EO (Yi)
VS-116 EO-G

VIDEO BLOCK DIAGRAM

NO.5-5 860106A


FUNCTION PCB V1047B5040
08
IC1 LA7224
TUNING AMP
ABLC
LIMITER LEVEL SHIFT
PEAK HOLD
INTEGRATOR
SHAPER
R4 10
D2 GMA-01
C2 10/16(M)
C5 100/6.3(M)
D1 PN323B
R1 1k
C1 2.2/35(M)
R2 22
R5 100k
C3 4.7/16(M)
C4 0.0047
FL1 38kHz
POWER SW1
EJECT SW2
PRE AMP PCB V1047B5050(2ED)
09
P2
GND
REC SIG
PB L·C
SW P
GND
PB FM
PB 5V
P3
SWEEP IN
GND
P1
CH1 (R)
CH1 (P)
CH2 (R)
CH2 (P)
V1027D5010
HEAD SUB PCB V1047D5170
VH-120A
VH-120B
RF CONVETER
VTR-T-OUT
IDL12V
VIDEO IN
AL12V
AUDIO IN
EG RF CONV. BOOSTER EO
EK RF CONV. BOOSTER EK
EA RF CONV. SW MDLC2S090A EA
ED RF CONV. SW ED
EV-M, EZ RF CONV. SW MDLC2D093A EV
TV TUNER UNIT
EG, EV-M TEED1-A04A
EK TEEB1-013A
EA TEES1-017A
ED TEEZ1-042A ED
EZ TEEB1-013A
ES TEEZ1-015A
06
P702
GND
REC SIG
PB L·C
SW P
GND
PB FM
PB 5V
P801
UNR 45V
UNR 8V
UNR 17V
GND
UNR 18V
DM STP
P502
SE
GND
PB
GND
REC
P403
CTL
GND
P501
GND
FE
P303
LM2
LM10
P305
POS 3
POS 2
POS 4
GND
POS 1
A/C HEAD PCB V1047D5150
R1 1/6W 10
REC
CTL
SIDE ERASE
PB
H901 HVMLA1004B
F.E HEAD PCB V1047D5160
H902 HVFMD0005A
LOADING MOTOR
M903 MXN138D10A
ENCODER
17
16
SW1
SW EJ PCB V1030D5190
IN901 TAPE VIEW LAMP
EJ
LINE FILTER PCB V1047C5070
EO-G
AC220V 50Hz
FL1 FK0B 160MH
C5 0.047/400AC(Z)
F1 T1A 250V
T901
EA
AC240V 50Hz
ED,EO,EZ
ED,EO AC220V 50Hz
EZ AC230V 50Hz
EA AC240V 50Hz
C5
ED,EZ,EA 0.01/400AC(Z)
EO 0.0047/400AC(M)
ED,EO 220V
EZ 230V
EA 240V
ED,EO V47EO
EZ V47EZ
EA V47EA
12
VOLTAGE SELECTOR
SW901
EK
AC200/240V 50Hz
ES
AC220/250V 50Hz
EK 200V 240V
ES 220V 250V
EVM PCB V1047C5060
EK 240V
ES 250V
EK 200V
ES 220V
EK V47EK
ES V47ES
C5 0.01/400AC(Z)
115V 230V
EV-M
AC115/230V 50/60Hz
POWER RESET
T901 V47EV-M
0V
115V
EG
AC220/110V 50/60Hz
110V 220V
11
T901 V47EG
F1
F2
D7 to 10 S5566B
D8
D9
D10
TR1 2SC3246(J,K)
C4 2200/25 (M)
FR2 1/2W 0.47(K)
D3 to 6 D5A17C
D4
D5
D6
FR3 0.43 (K)
C3 2200/25 (M)
D2 S5566B
FR1 1/2W 0.56(K)
C1 2200/63(M)
C2 2200/16 (M)
D1 S5566B
FR5 5.6(K)
P1
UNR 18V
HEAT SW
TH901 DRUM HEATER
J2
DM STP
UNR 18V
GND
UNR 17V
UNR 8V
UNR 45V
POWER PCB V1047C5030
* | EG, EA, ED, EZ, ES | EK
F1 | T1A 250V | T1A 250V
F2 | T2A 250V | T2A 250V
B (POWER SUPPLY) LINE
WARNING: ⚠ IN
REPL
RECO
AVERTISSEMEN
POUR
NE R
A B C D E F
1 2 3 4 5 6 7 8



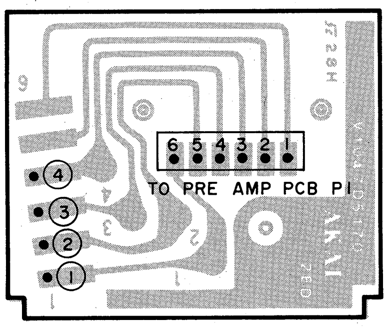
PICTURE
VR1 10k
TRACKING
VR2 100k
P201
SHARP
PIX CTL
SOFT
EXT TRK
AL 5V
NC
P202
GND
IDL 5V
IRQ
EJECT
COMMON
FUNCTION
R5 100k
L1 38kHz
TV TUNER UNIT
EG, EV-M TEEDI-A04A
EK TEEBI-013A
EA TEESI-017A
ED TEEZI-042A ED
EZ TEEBI-013A
ES TEEZI-015A
VIF UNIT
EG, EV-M VS-112EG
EK V1047EK
EA V1047EA
ED V1047ED
EZ V1047EZ
ES V1047ES
10
07
OPERATION PCB V1047A5020
P103
EK ONLY
EXCLUDE EK
P104
P102
P101
P106
P601
P301
P302
VU
VH
VL
33V
VT
AFT
IDL 5V
VOW
H-SYNC
V-SYNC
RESET
B/V̄
SC
SI/SO
SO/SI
PAUSE
FF
TIMER
SLP
TV/VIDEO
REW
PLAY
REC
SP
P701
P402
CTL CHK
SWP CHK
V.SYNC CHK
TEST TERMINAL
MAIN PCB V1047A5010
P308
UNR 18V
LAMP
C SW A
C SW B
END S
START S
P309
S LED
P310
TRP(C)
TRP(A)
TRP(K)
P306
EJECT S
P307
REC SF
P401
FG
CM ⊖
CM ⊕
P404
DM CTL
DM PG
POWER GND
17
SW1
SW EJ PCB V1030D5190
16
IN901 TAPE VIEW LAMP
TR1 PN268(R,S)
SENSOR(R) PCB V1047D5130
15
SENSOR(L) PCB V1047D5140
EJECTOR BLOCK
D1 LN59
SENSOR LED PCB V1047D5100
14
PH1 ON2170 (Q,R)
SENSOR REEL(A) PCB V1047D5110
SW2
M902 CAPSTAN MOTOR
J101
13
TH901 DRUM HEATER
P1
HEAT SW
TR1 2SC3246(J,K)
J2
DM STP
UNR 17V
UNR 8V
UNR 45V
FR3 0.43 (K)
C2 2200/16 (M)
IC1 TA7245F
R1 3.3k
R2 3.3k
R3 3.3k
R4 3.3k
R5 3.3k
R6 3.3k
C1 0.0012 (M)
C2 0.0012 (M)
C3 0.0012 (M)
C4 0.047(Z)
HD3 OH009 (B,C,D)
HD2 OH009 (B,C,D)
HD1 OH002 (HQ,HR)
R8 4.7k
R9 4.7k
R10 7.5k
R21 1/2W 1.6
C6 0.22(Z)
C9 10/25(M)
C8 10/25(M)
C10 10/25(M)
L1
L2
L3
L4
L5
L6
R22 1k
R11 4.7k
R12 4.7k
C7 0.0056(M)
R13 300k
R14 1k
R20 1k
C5 0.0012 (M)
IC2 2/2
IC2 1/2
R15 10k
R16 10k
R17 300k
R18 470k
R19 300k
C11 10/16 (M)
HO1
IC2 NJM4558M
TR1
TR1 : 2SC2712
MOTOR PCB M3223C5010
E C B
2SC3246

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

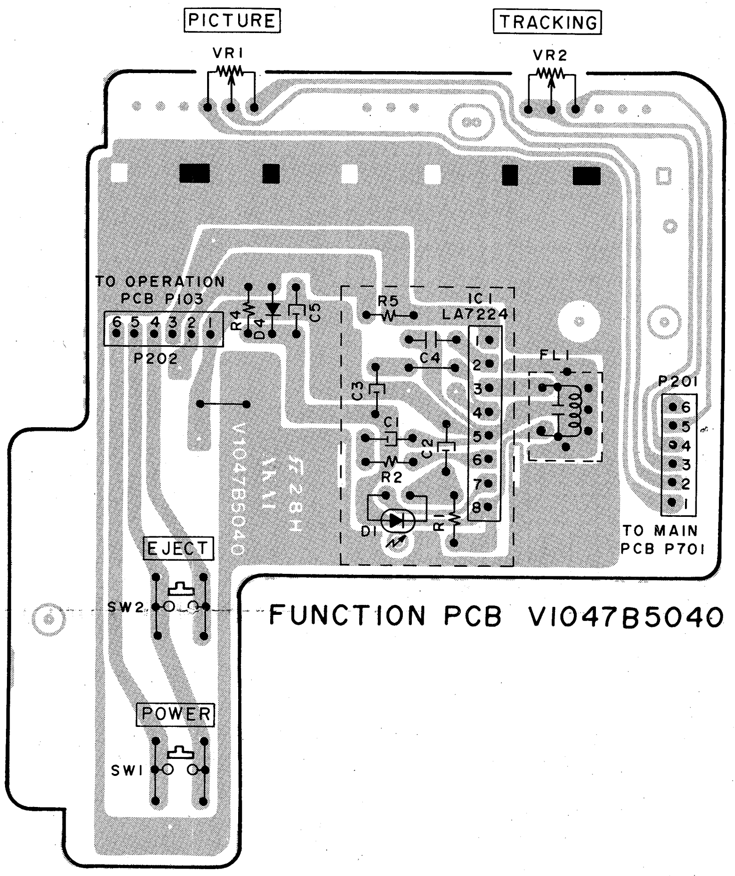
AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN µF 50WV(J)
POWER TRANSFORMER IS DIFFERENT
ACCORDING TO AREA

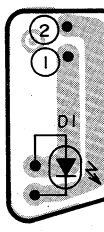
VS-112 EG/EK/EA/ED
EV-M/EZ/ES
VS-105 EK
VS-115 EO/EO(Y1)
VS-116 EO-G
CONNECTION DIAGRAM
NO.5-1 860107A


6 5 4 3 2 1
TO PRE AMP PCB P1
④
③
②
①
AKAI

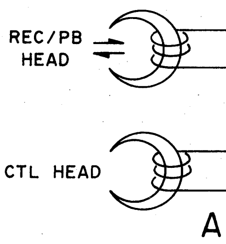
HEAD SUB PCB
V1047D5170 (2ED)


PICTURE
VR1
TRACKING
VR2
TO OPERATION PCB P103
6 5 4 3 2 1
P202
R4
D4
C5
R5
IC1
LA7224
C4
C3
C1
C2
R2
R1
D1
FL1
P201
TO MAIN PCB P701
V1047B5040
AKAI
EJECT
SW2
POWER
SW1

FUNCTION PCB V1047B5040



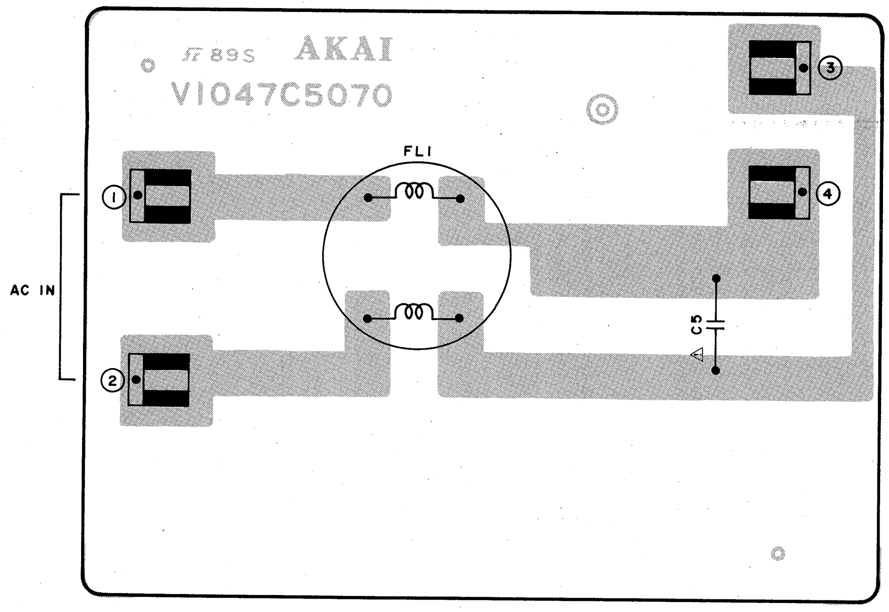
SENSO
V1047


REC/PB HEAD
CTL HEAD

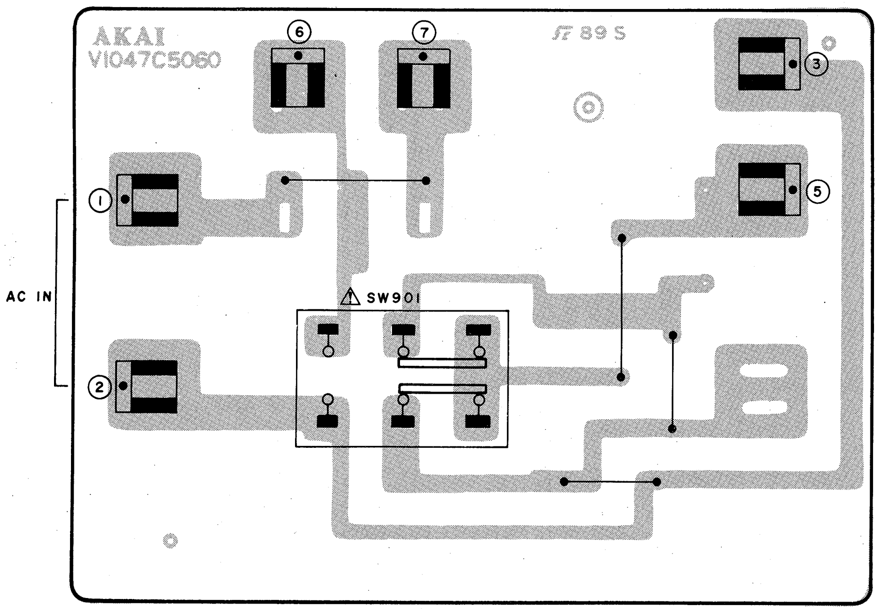
A
V

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY,
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

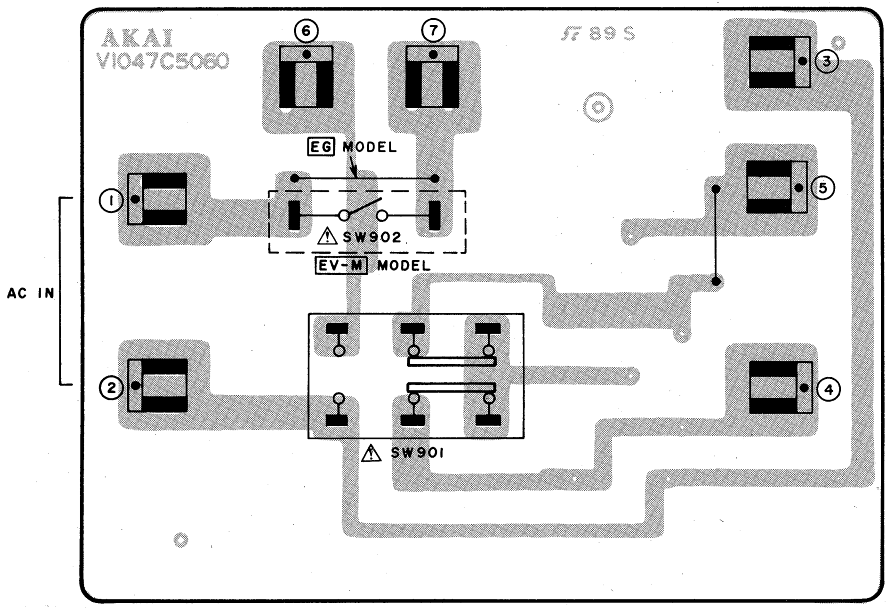
AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT


AKAI
V1047C5070
FL1
AC IN
①
②
③
④
⚠ C5

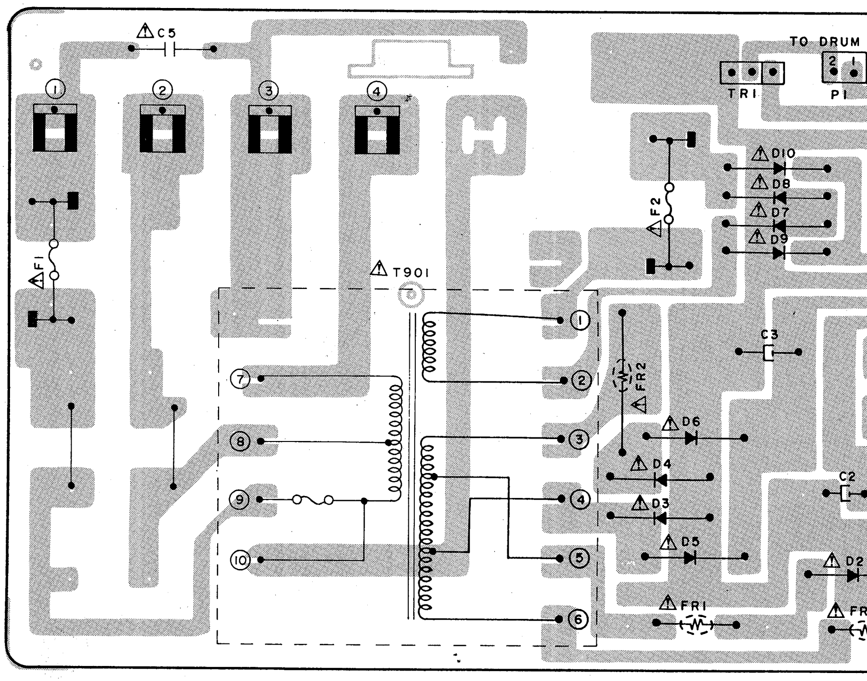
LINE FILTER PCB V1047C5070 EO-G


AKAI
V1047C5060
⑥
⑦
③
①
⑤
AC IN
②
⚠ SW901

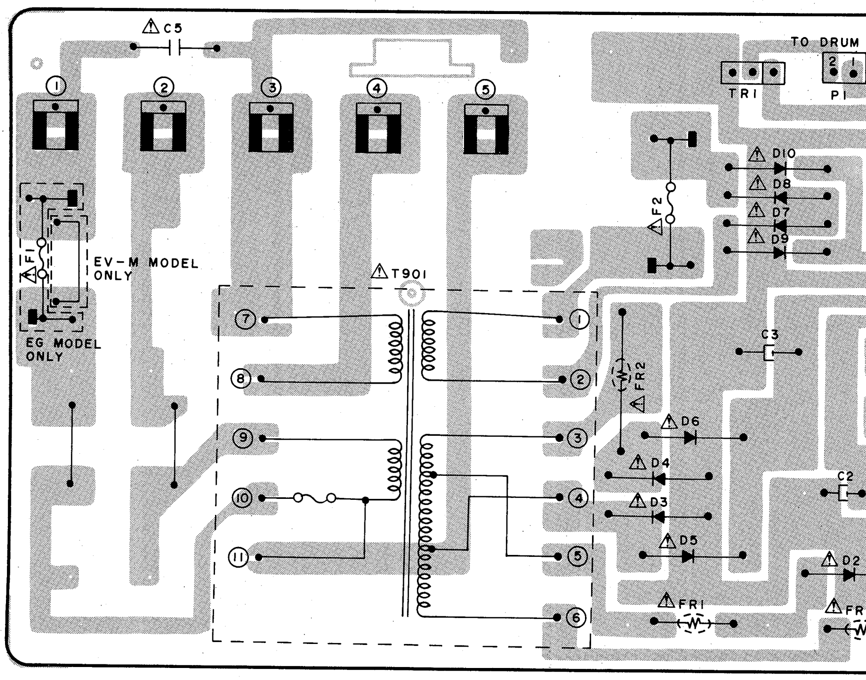
EVM PCB V1047C5060 EK , ES


AKAI
V1047C5060
⑥
⑦
③
EG MODEL
①
⚠ SW902
EV-M MODEL
⑤
AC IN
②
④
⚠ SW901

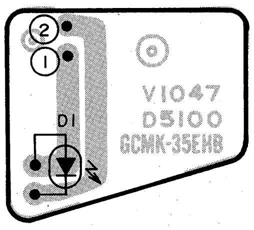
EVM PCB V1047C5060 EG EV-M


⚠C5
TO DRUM
TR1
P1
①
②
③
④
⚠F1
⚠F2
⚠D10
⚠D8
⚠D7
⚠D9
⚠T901
⑦
⑧
⑨
⑩
①
②
③
④
⑤
⑥
⚠FR2
C3
⚠D6
⚠D4
⚠D3
⚠D5
C2
⚠D2
⚠FR1

POWER PCB J1047C5030 (3ED) EK,ES

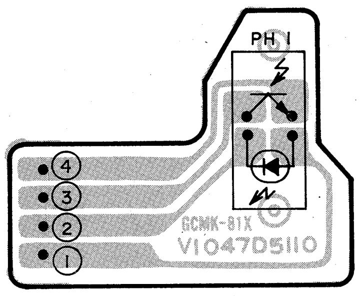

⚠C5
TO DRUM
TR1
P1
①
②
③
④
⑤
⚠F1
EV-M MODEL ONLY
EG MODEL ONLY
⚠F2
⚠D10
⚠D8
⚠D7
⚠D9
⚠T901
⑦
⑧
⑨
⑩
⑪
①
②
③
④
⑤
⑥
⚠FR2
C3
⚠D6
⚠D4
⚠D3
⚠D5
C2
⚠D2
⚠FR1

POWER PCB J1047C5030 (3ED) EG,EV-M



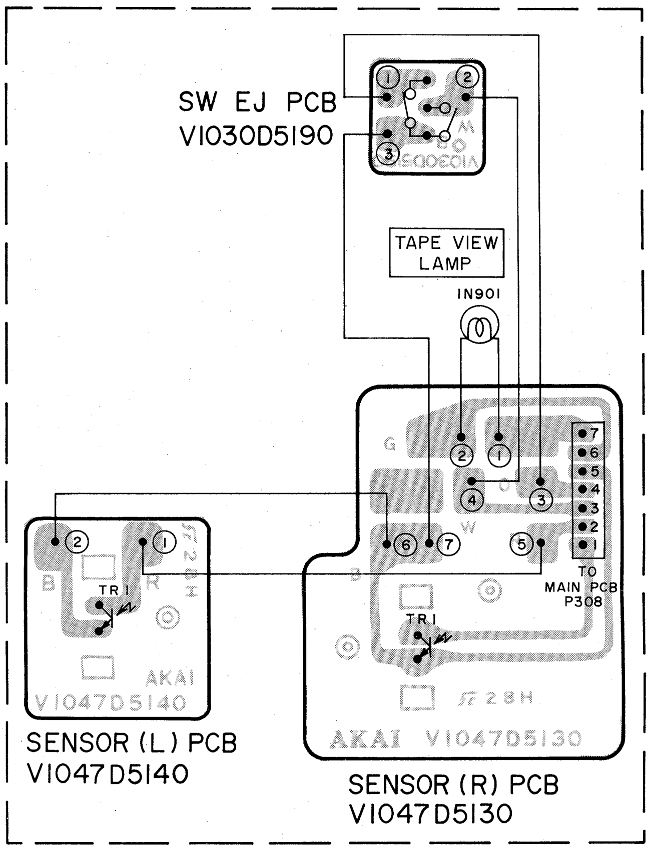
②
①
D1
V1047
D5100
GCMK-35EHB

SENSOR LED PCB
V1047D5100



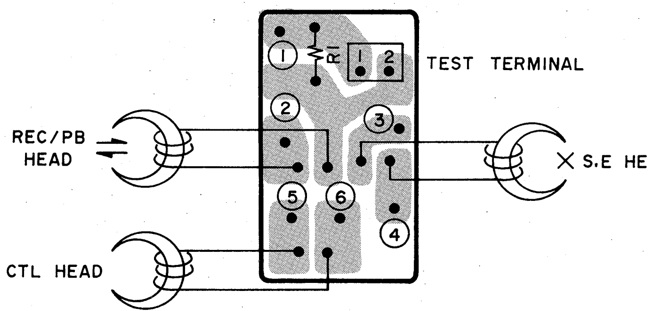
PH1
④
③
②
①
GCMK-81X
V1047D5110

SENSOR REEL(A) PCB
V1047D5110



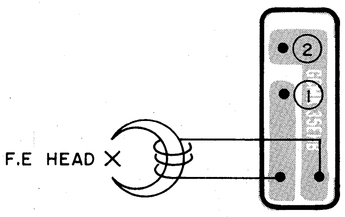
SW EJ PCB
V1030D5190
TAPE VIEW LAMP
IN901
TO MAIN PCB P308
TR1
AKAI
V1047D5140
SENSOR (L) PCB
V1047D5140
AKAI V1047D5130
SENSOR (R) PCB
V1047D5130

EJECTOR BLOCK

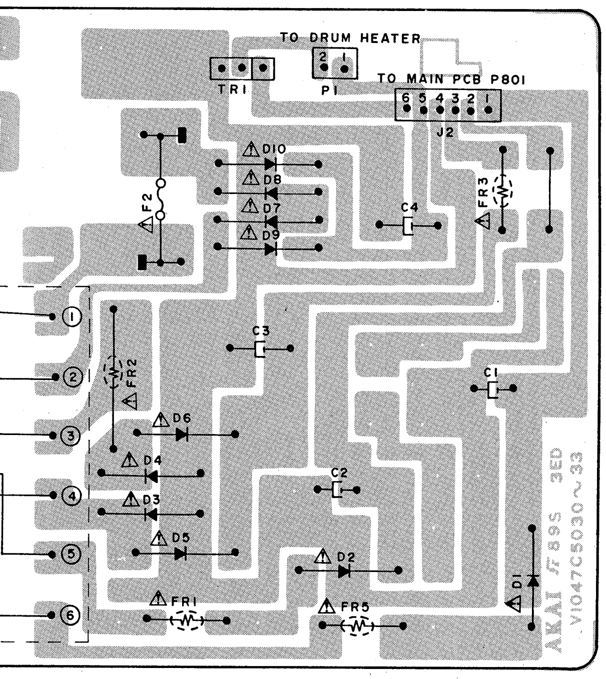


TEST TERMINAL
REC/PB HEAD
S.E HEAD
CTL HEAD
R1

A/C HEAD PCB
V1047D5150

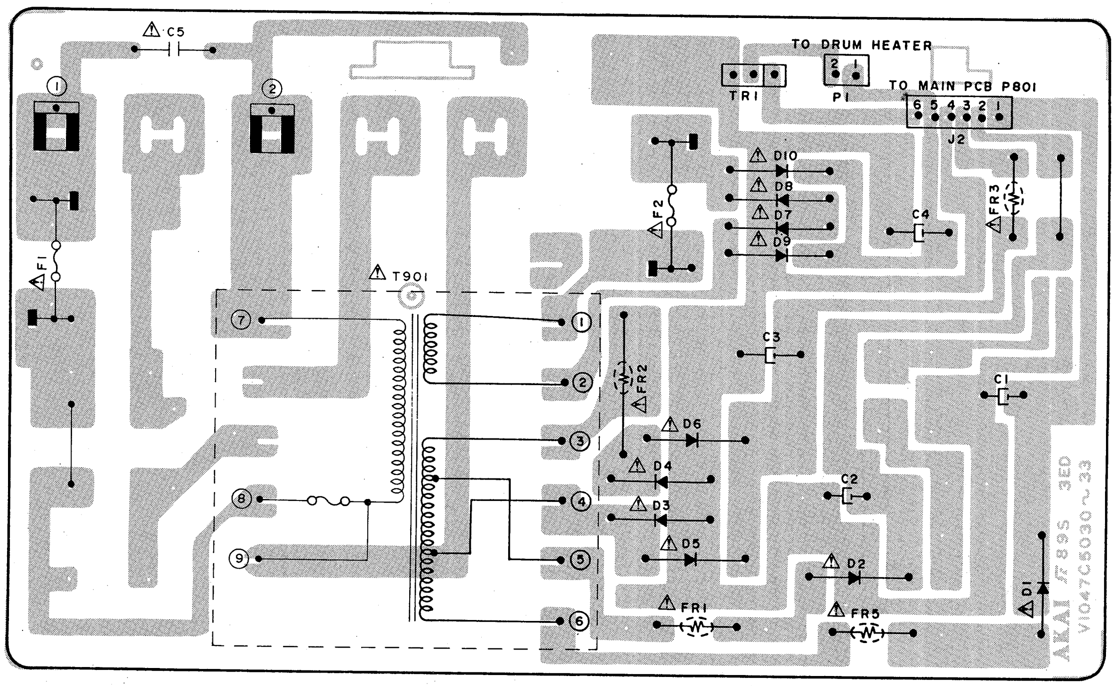


F.E HEAD PCB
V1047D5160



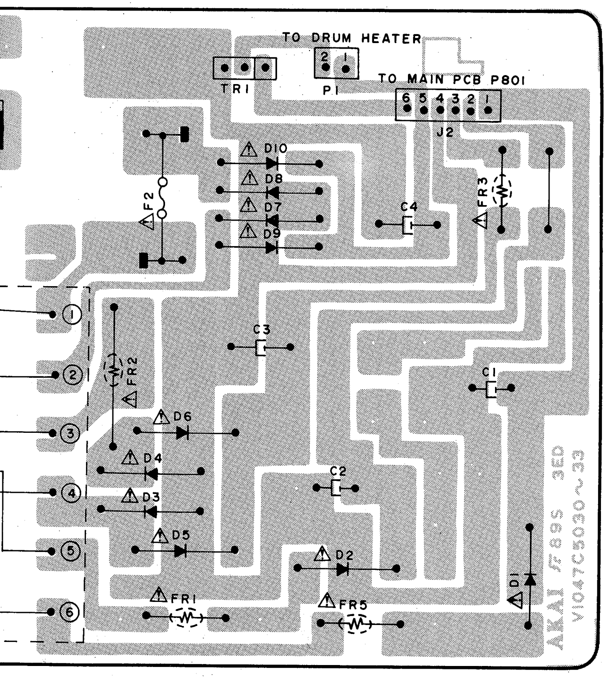
TO DRUM HEATER
TR1
P1
TO MAIN PCB P801
J2
AKAI 89S 3ED
V1047C5030~33

030 (3ED) EK,ES



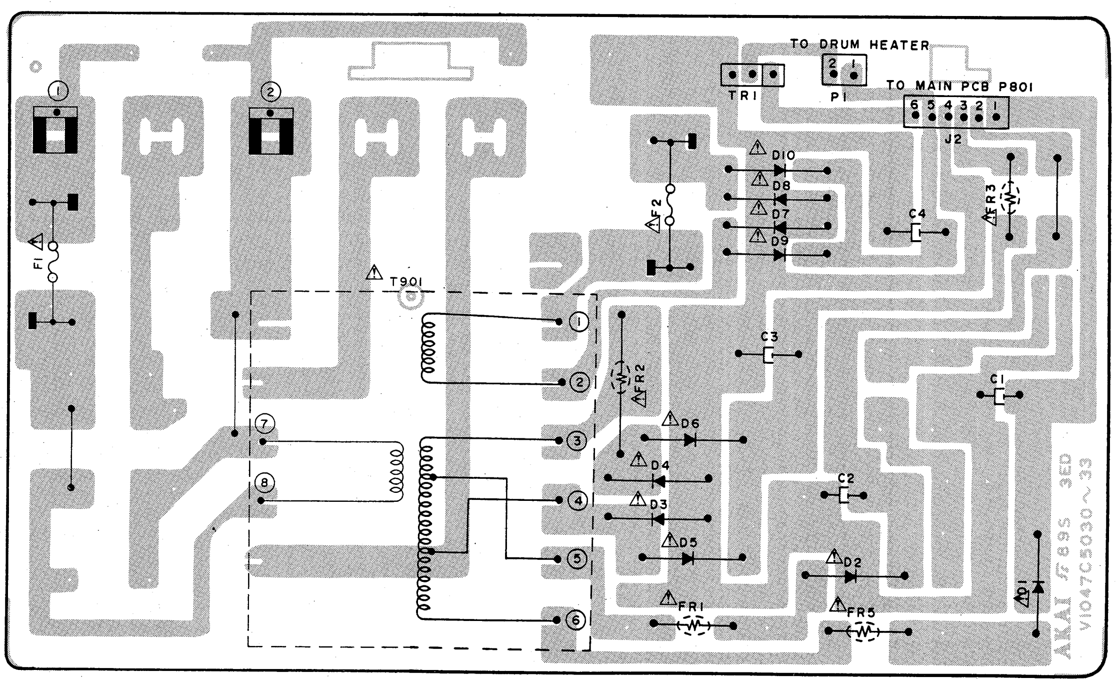
TO DRUM HEATER
TR1
P1
TO MAIN PCB P801
J2
T901
AKAI 89S 3ED
V1047C5030~33

POWER PCB J1047C5030 (3ED) EA,ED,EO,EZ



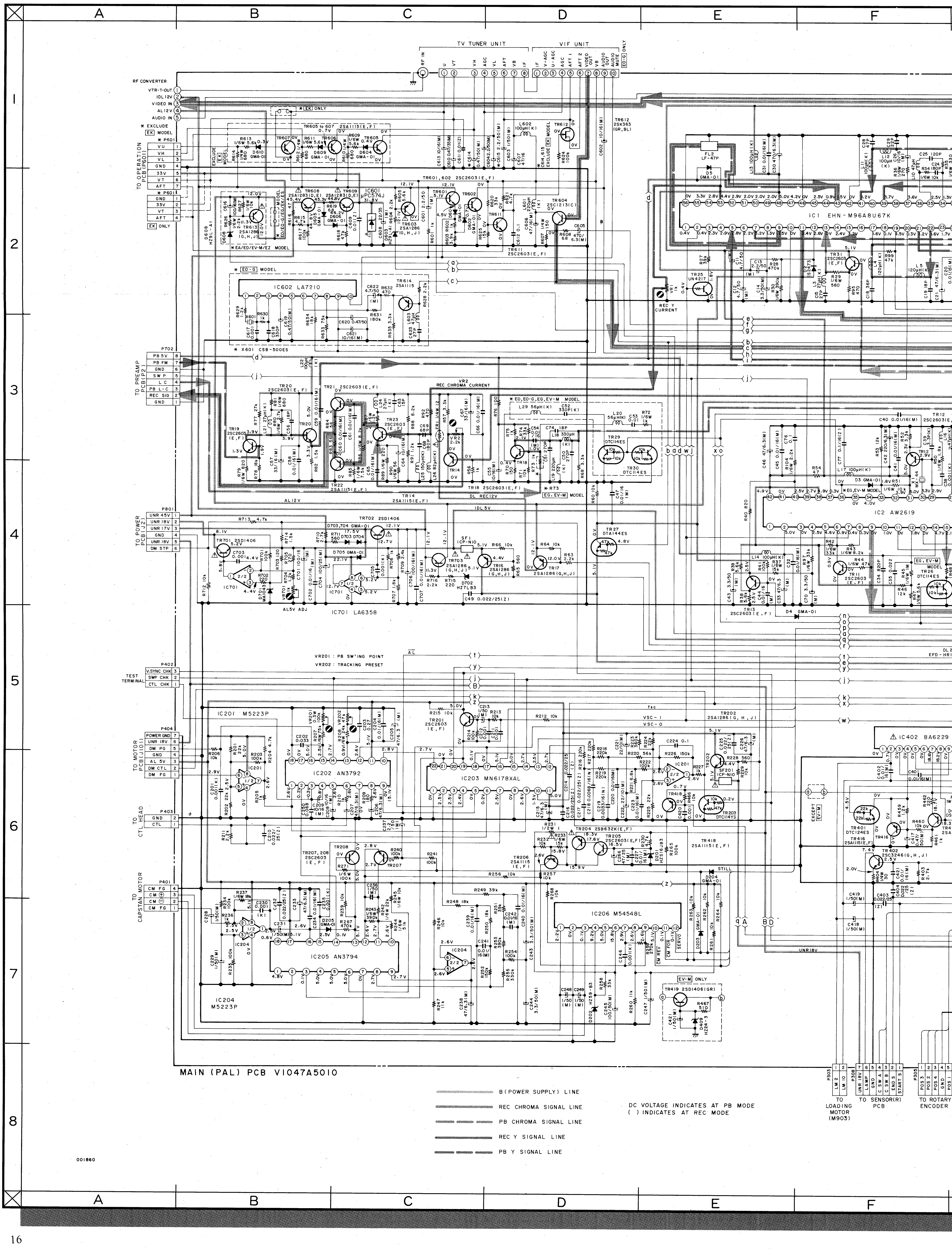
TO DRUM HEATER
TR1
P1
TO MAIN PCB P801
J2
AKAI 89S 3ED
V1047C5030~33

030 (3ED) EG,EV-M



TO DRUM HEATER
TR1
P1
TO MAIN PCB P801
J2
T901
AKAI 89S 3ED
V1047C5030~33

POWER PCB V1047C5030 (3ED) EO-G

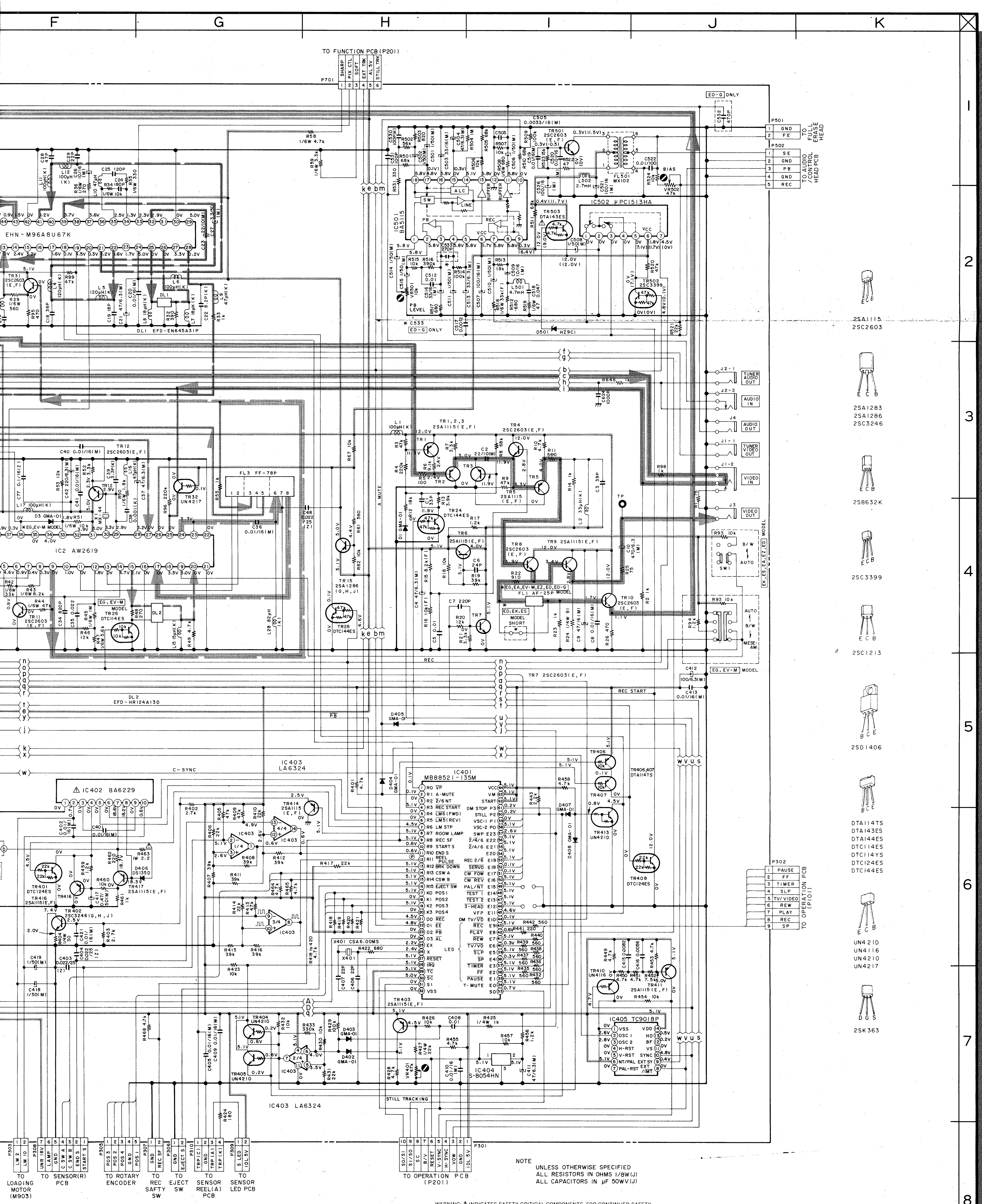

TV TUNER UNIT
VIF UNIT
RF IN
RF CONVERTER
TO OPERATION PCB(P601)
TO PREAMP PCB(P2)
TO POWER PCB(J2)
TEST TERMINAL
TO MOTOR PCB(J101)
TO CTL HEAD
TO CAPSTAN MOTOR
IC1 EHN-M96A8U67K
IC2 AW2619
IC601 μPC574J
IC602 LA7210
IC701 LA6358
IC201 M5223P
IC202 AN3792
IC203 MN6178XAL
IC204 M5223P
IC205 AN3794
IC206 M5454BL
IC402 BA6229
VR201 : PB SW'ING POINT
VR202 : TRACKING PRESET
REC CHROMA CURRENT
REC Y CURRENT
AL5V ADJ
* EK ONLY
* EO-G MODEL
* EA/ED/EV-M/EZ MODEL
EK ONLY
EV-M ONLY
EXCEPT EV-M
TO LOADING MOTOR (M903)
TO SENSOR(R) PCB
TO ROTARY ENCODER
A
B
C
D
E
F
1
2
3
4
5
6
7
8

MAIN (PAL) PCB V1047A5010

B(POWER SUPPLY) LINE
REC CHROMA SIGNAL LINE
PB CHROMA SIGNAL LINE
REC Y SIGNAL LINE
PB Y SIGNAL LINE

DC VOLTAGE INDICATES AT PB MODE
( ) INDICATES AT REC MODE

001860


TO FUNCTION PCB (P201)
P701
SHARP
PIX CTL
SOFT
EXT TRK
AL 5V
STILL TRK
EO-G ONLY
P501
GND
FE
TO FULL ERASE HEAD
P502
SE
GND
PB
GND
REC
TO AUDIO /CONTROL HEAD PCB
IC501 BA5115
IC502 μPC1513HA
FL501 MX102
BIAS
EHN-M96A8U67K
DL1 EFD-EN645A31P
IC2 AW2619
FL3 FF-78P
FL1 AF-25P
DL2 EFD-HR124A130
TUNER AUDIO OUT
AUDIO IN
AUDIO OUT
TUNER VIDEO OUT
VIDEO IN
VIDEO OUT
TP
A MUTE
REC
REC START
C-SYNC
PB
IC401 MB88521-135M
IC402 BA6229
IC403 LA6324
IC404 S-8054HN
IC405 TC9018P
X401 CSA6.00MS
STILL TRACKING
P302
PAUSE
FF
TIMER
SLP
TV/VIDEO
REW
PLAY
REC
SP
TO OPERATION PCB (P101)
P301
SO/SI
SI/SO
SC
B/V
RESET
V-SYNC
H-SYNC
VOW
GND
IDL 5V
TO OPERATION PCB (P201)
P303
LM 2
LM 10
TO LOADING MOTOR (M903)
P308
UNR 18V
LAMP
GND
C SW A
C SW B
END S
START S
TO SENSOR(R) PCB
P305
POS 3
POS 2
POS 4
GND
POS 1
TO ROTARY ENCODER
P307
GND
REC SF
TO REC SAFTY SW
P306
GND
EJECT S
TO EJECT SW
P310
TRP (C)
GND
TRP (A)
TRP (K)
TO SENSOR REEL(A) PCB
P309
S LED
IDL 5V
TO SENSOR LED PCB
2SA1115
2SC2603
2SA1283
2SA1286
2SC3246
2SB632K
2SC3399
2SC1213
2SD1406
DTA114TS
DTA143ES
DTA144ES
DTC114ES
DTC114YS
DTC124ES
DTC144ES
UN4210
UN4116
UN4210
UN4217
2SK363
F
G
H
I
J
K
1
2
3
4
5
6
7
8

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W(J)
ALL CAPACITORS IN μF 50WV(J)

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

SCHEMATIC DIAGRAM
NO.5-2 860108A

LOCATION OF ICs

IC1	B-3,4,5
IC2	E-3,4,5
IC201	F-1
IC202	F-2
IC203	G-2
IC204	G-1
IC205	G-1,2 H-1,2
IC206	H-1,2
IC401	H-4,5
IC402	H-4
IC403	F-5 G-5
IC404	H-6
IC405	G-6
IC501	D-2
IC502	E-2
IC601	B-2
IC602	B-2 C-2
IC701	D-6

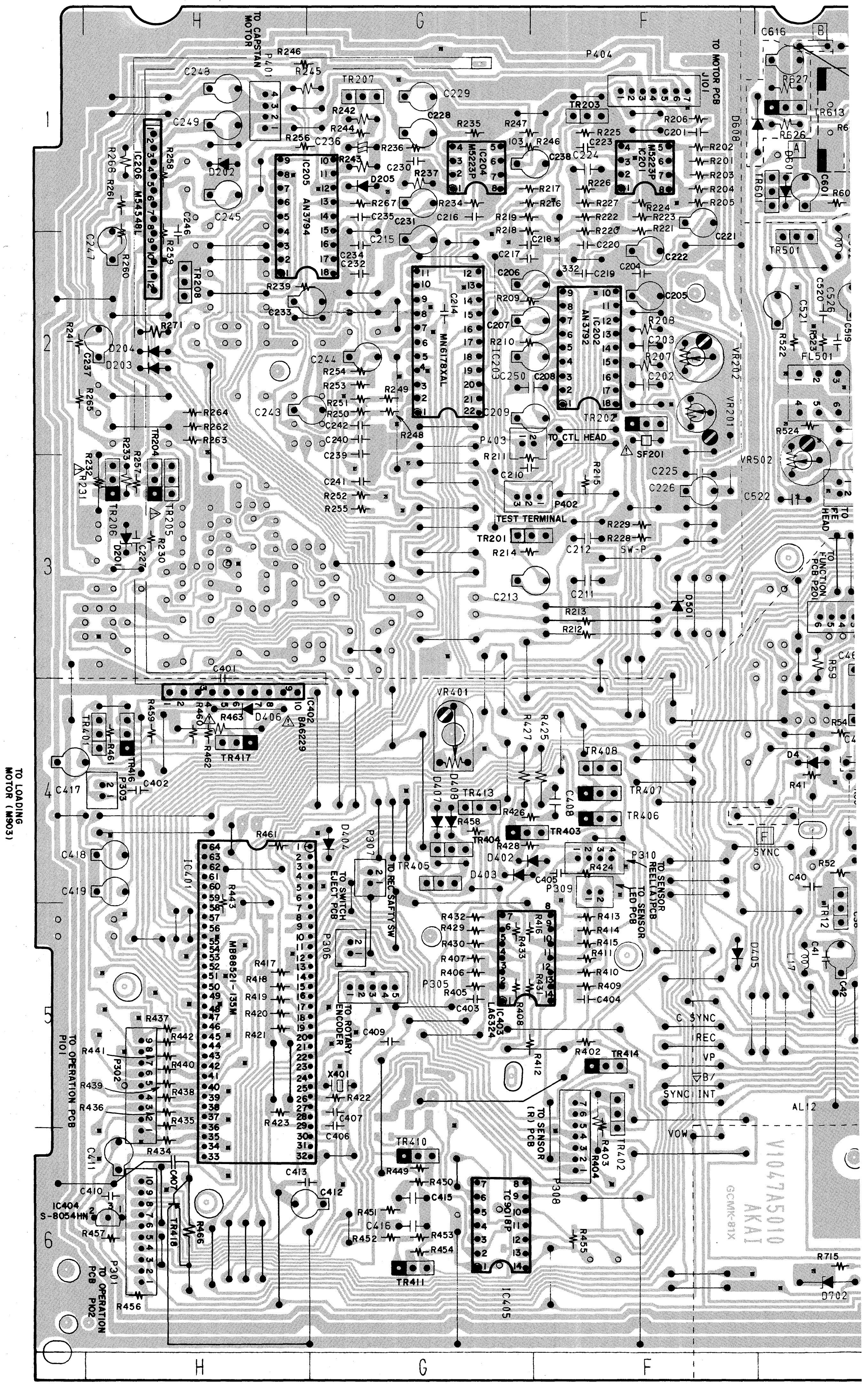
LOCATION OF TRs

TR1	C-6	TR201	F-3, G-3
TR2	C-5	TR202	F-2
TR3	C-5	TR203	F-1
TR4	C-5	TR204	H-3
TR5	B-5	TR205	H-3
TR6	B-5,6	TR206	H-3
TR7	C-5,6	TR207	G-1
TR8	B-5	TR208	H-2
TR9	B-5	TR401	H-4
TR10	B-5	TR402	F-5,6
TR11	D-4	TR403	G-4
TR12	E-4	TR404	G-4
TR13	E-4	TR405	G-4
TR14	D-4	TR406	F-4
TR15	D-5,6	TR407	F-4
TR16	D-5	TR408	F-4
TR17	C-5	TR410	G-6
TR18	C-4	TR411	G-6
TR19	C-4	TR413	G-4
TR20	C-3	TR414	F-5
TR21	D-3	TR416	H-4
TR22	D-3	TR417	H-4
TR23	D-4	TR418	H-6
TR24	C-5, D-5	TR501	E-1
TR25	C-5	TR502	E-2
TR26	D-4	TR503	E-1
TR27	E-5	TR601	E-1
TR28	E-6	TR602	E-1
TR29	C-4	TR603	C-2
TR30	C-4	TR604	C-1
TR31	B-4, C-4	TR605	C-1,2
TR32	E-5	TR606	B-1,2
		TR607	B-1,2
		TR608	B-2
		TR609	B-2
		TR611	B-2
		TR612	B-1
		TR613	E-1
		TR614	B-2
		TR701	B-6
		TR702	B-6
		TR703	D-6, E-6

TR1, to 3,5,6,9,14,22, 206,403,411,414,416 to 418,605 to 607	2SA1115
TR4,7,8,10 to 13, 18 to 21, 23, 31, 201, 205, 207, 208, 501, 601, 602, 611	2SC2603
TR15 to 17, 202, 603, 613, 703	2SA1286
TR24, 28	DTC144ES
TR25, 32	UN4217
TR26,29,30	DTC114ES
TR27	DTA144ES
TR203	DTC114YS
TR204	2SB632K
TR401, 408	DTC124ES
TR402	2SC3246
TR404, 405	UN4210
TR406, 407	DTA114TS
TR410	UN4116
TR413	UN421D
TR502	2SC3399
TR503	DTA143ES
TR604	2SC1213
TR608, 609	2SA1283
TR612	2SK363
TR701,702	2SD1406

LOCATION OF CONNECTORs

P301	H-6	P401	H-1
P302	H-5	P402	G-3
P303	H-3	P403	G-2
P305	G-5	P404	F-1
P306	G-5	P501	E-3
P307	G-4	P502	E-2
P308	F-5,6	P601	C-2
P309	F-4	P701	E-3
P310	F-4	P702	D-3
		P801	D-6

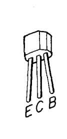

H
G
F
1
2
3
4
5
6
TO CAPSTAN MOTOR
TO MOTOR PCB
J101
P401
P404
IC205 AN3794
IC206 M54548L
IC204 M5223P
IC201 M5223P
IC202 AN3792
IC203 MN6178XAL
IC401 MB88521-135M
IC402 BA6229
IC403 LA6324
IC404 S-8054HN
IC405 TC9018P
TEST TERMINAL
TO CTL HEAD
SW-P
SF201
VR201
VR202
VR401
VR502
TO FUNCTION PCB P201
TO FE HEAD
TO LOADING MOTOR (M903)
TO SWITCH EJECT PCB
TO REC SAFTY SW
TO ROTARY ENCODER
TO SENSOR REEL(A)PCB
TO SENSOR LED PCB
TO SENSOR (R) PCB
TO OPERATION PCB P101
TO OPERATION PCB P102
C.SYNC
REC
VP
B/
SYNC INT
VOW
AL12
V1047A5010
AKAI
GCMK-81X

VR1 Y REC CURRENT
VR2 CHROMA REC CURRENT
VR201 PB SWITCHING POINT
VR202 TRACKING PRESET
VR401 STILL TRACKING
VR501 PB AUDIO LEVEL
VR502 AUDIO BIAS CURRENT
VR701 AL 5V

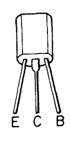
B ▣●● = NPN TRANSISTOR

B ■●● = PNP TRANSISTOR

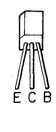
	A	B	C	D	E	F	G	I
EA	○			○				○
ED	○			○			○	
EG		○		○		○		○
EK		○			○		○	
EO		○		○		○		○
EO-G		○	○	○		○		○
ES		○		○			○	
EV-M	○			○		○		○
EZ	○			○				○



2SA1115
2SC2603

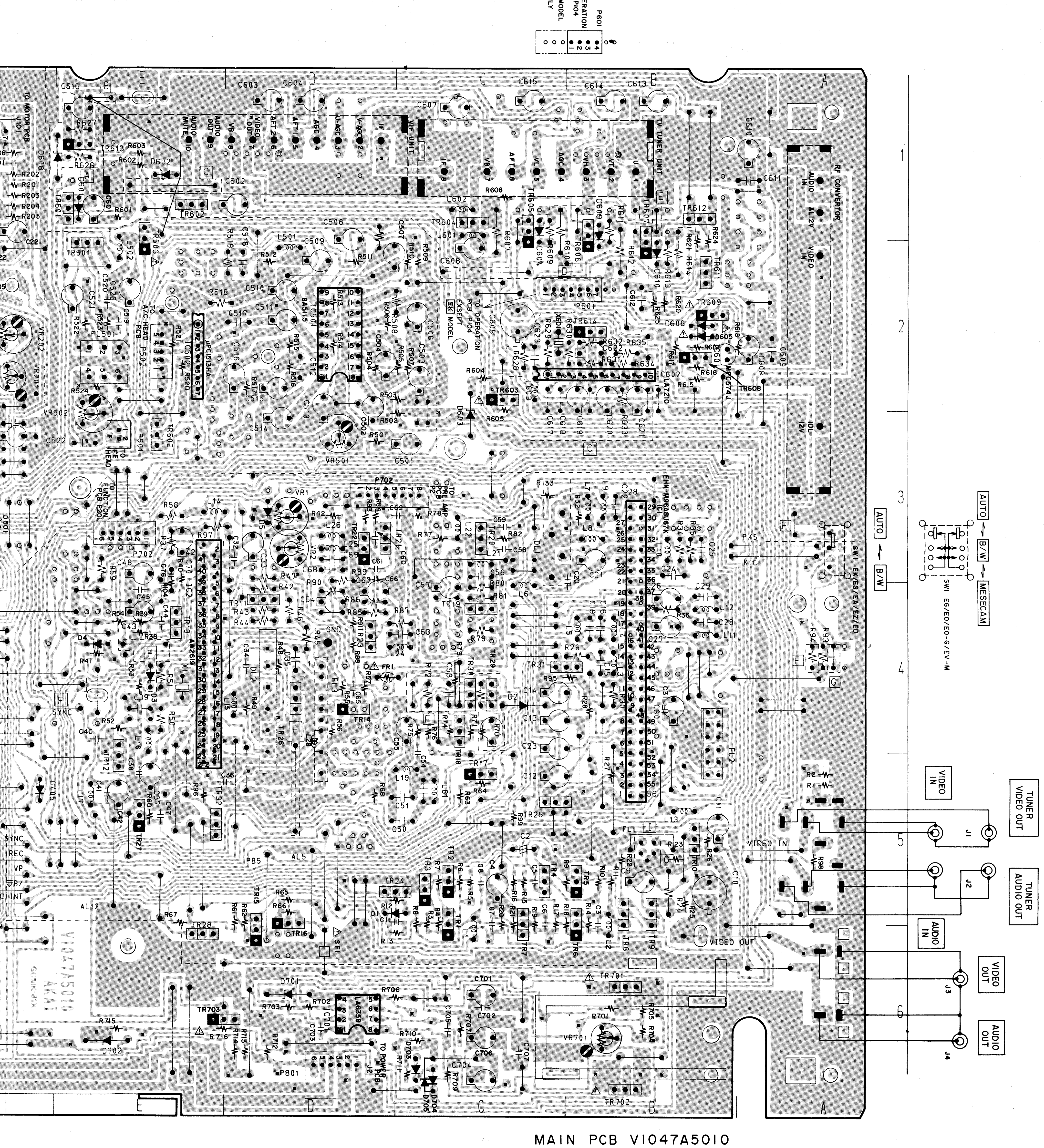


2SA1283
2SA1286
2SC3246

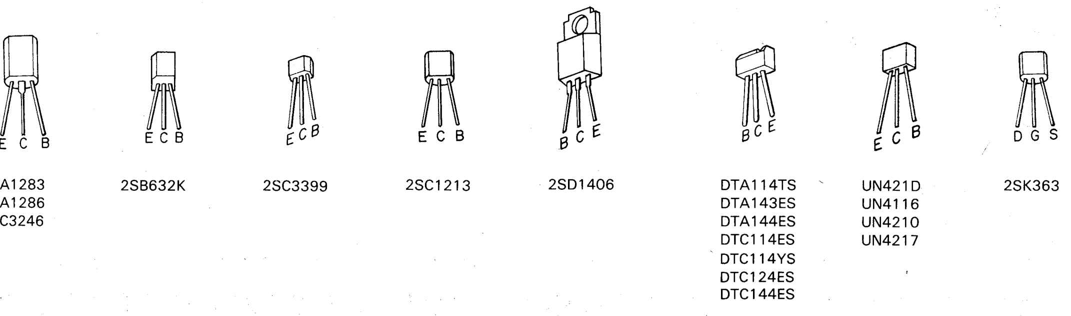


2SB632K

2S


P601
TO OPERATION PCB P104
EK MODEL ONLY
TO MOTOR PCB J101
AUDIO MUTE 10
AUDIO OUT 9
VB 8
VIDEO OUT 7
AFT 2 6
AFT 1 5
AGC 4
U-AGC 3
V-AGC 2
IF 1
VIF UNIT
IF 8
VB 7
AFT 6
VL 5
AGC 4
OVH 3
VT 2
U 1
TV TUNER UNIT
RF CONVERTOR
AUDIO IN
AL12V
VIDEO IN
IDL 12V
TO A/C HEAD PCB P502
TO FE HEAD
TO FUNCTION PCB P201
TO OPERATION PCB P104 EXSEPT EK MODEL
TO PRE AMP PCB P2
BA5115
μPC1513HA
LA7210
MPC574J
IEHN-M96ABU67K
AW2619
LA6358
TO POWER PCB J2
SW1 EK/ES/EA/EZ/ED
SW1 EG/EO/EO-G/EV-M
AUTO
B/W
MESECAM
P/S
K.C
SYNC
REC
VP
C INT
AL12
AL5
PB5
GND
VIDEO IN
VIDEO OUT
V1047A5010
AKAI
GCMK-81X
VIDEO IN
TUNER VIDEO OUT
TUNER AUDIO OUT
AUDIO IN
VIDEO OUT
AUDIO OUT
J1
J2
J3
J4
A
B
C
D
E
1
2
3
4
5
6

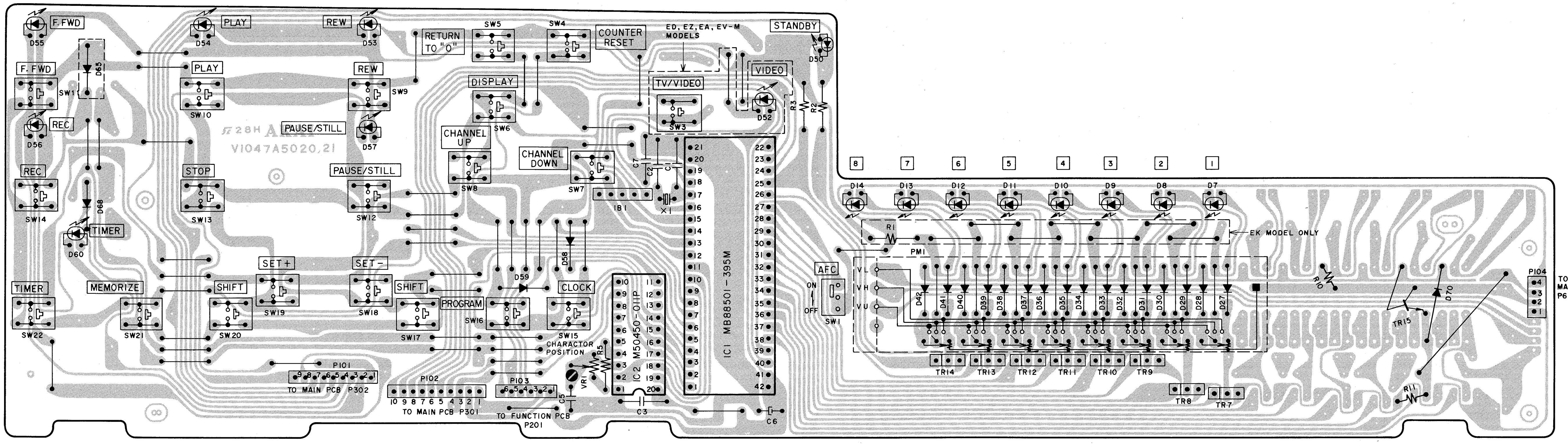
MAIN PCB V1047A5010


E C B
A1283
A1286
C3246
E C B
2SB632K
E C B
2SC3399
E C B
2SC1213
B C E
2SD1406
B C E
DTA114TS
DTA143ES
DTA144ES
DTC114ES
DTC114YS
DTC124ES
DTC144ES
E C B
UN421D
UN4116
UN4210
UN4217
D G S
2SK363

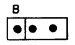
WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

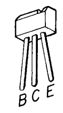
※D65 EA, ED, EZ MODEL

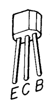

F.FWD
D55
F.FWD
SW11
D65
REC
D56
REC
SW14
D68
TIMER
D60
TIMER
SW22
MEMORIZE
SW21
PLAY
D54
PLAY
SW10
STOP
SW13
SHIFT
SW20
SET+
SW19
PAUSE/STILL
V1047A5020,21
REW
D53
REW
SW9
D57
PAUSE/STILL
SW12
SET−
SW18
SHIFT
SW17
RETURN TO "0"
SW5
SW4
DISPLAY
SW6
CHANNEL UP
SW8
CHANNEL DOWN
SW7
PROGRAM
SW16
D59
D58
CLOCK
SW15
CHARACTOR POSITION
COUNTER RESET
ED, EZ, EA, EV-M MODELS
TV/VIDEO
SW3
VIDEO
D52
STANDBY
D50
R3
R2
C7
C2
C1
IB1
X1
IC1 MB88501-395M
IC2 M50450-011P
VR1
R5
C5
C3
C6
P101
TO MAIN PCB P302
P102
10 9 8 7 6 5 4 3 2 1
TO MAIN PCB P301
P103
TO FUNCTION PCB P201
AFC
ON
OFF
SW1
VL
VH
VU
8
7
6
5
4
3
2
1
D14
D13
D12
D11
D10
D9
D8
D7
R1
PM1
EK MODEL ONLY
D42
D41
D40
D39
D38
D37
D36
D35
D34
D33
D32
D31
D30
D29
D28
D27
TR14
TR13
TR12
TR11
TR10
TR9
TR8
TR7
R10
TR15
D70
R11
P104
TO MAIN PCB P601

OPERATION PCB V1047A5020



NPN TRANSISTOR

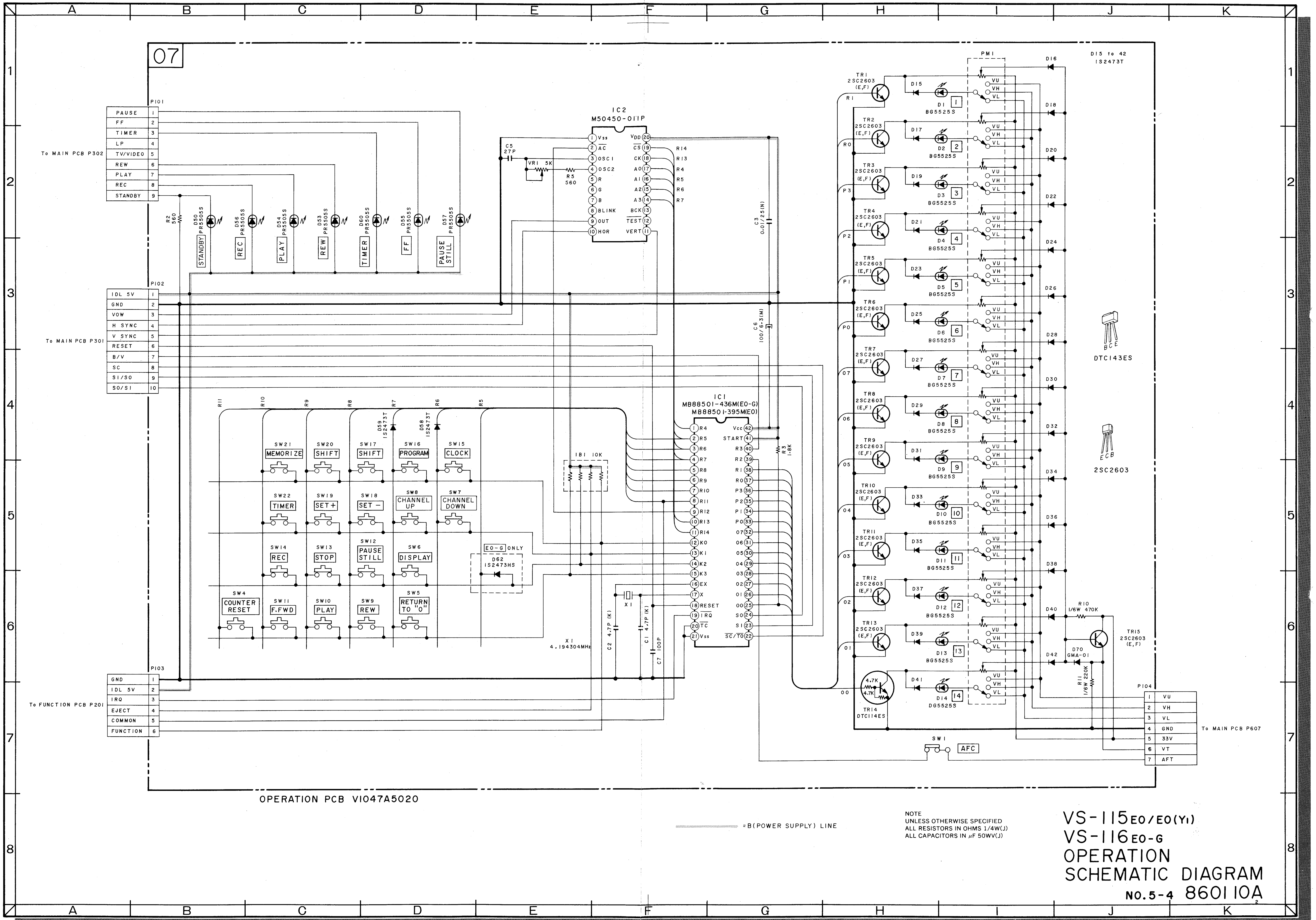




TR7 to 13,15 .... 2SC2603
TR14 .... DTC143ES

DTC143ES

2SC2603

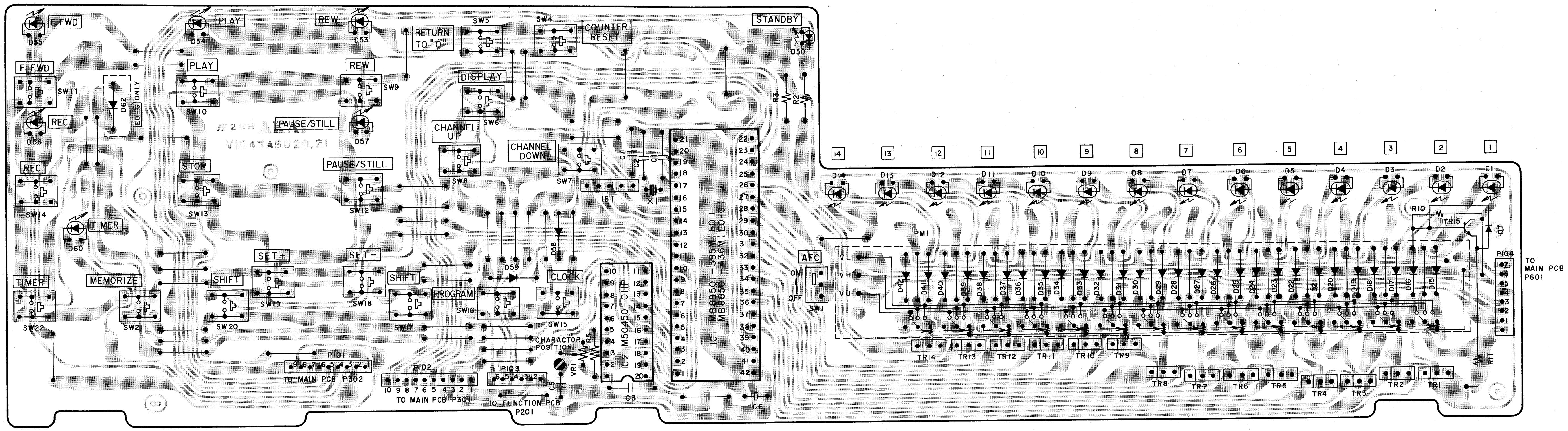

07
P101
PAUSE
FF
TIMER
LP
TV/VIDEO
REW
PLAY
REC
STANDBY
To MAIN PCB P302
P102
IDL 5V
GND
VOW
H SYNC
V SYNC
RESET
B/V
SC
SI/SO
SO/SI
To MAIN PCB P301
P103
GND
IDL 5V
IRQ
EJECT
COMMON
FUNCTION
To FUNCTION PCB P201
R2 560
D50 PR5505S STANDBY
D56 PR5505S REC
D54 PR5505S PLAY
D53 PR5505S REW
D60 PR5505S TIMER
D55 PR5505S FF
D57 PR5505S PAUSE STILL
IC2
M50450-011P
C5 27P
VR1 5K
R5 560
Vss
AC
OSC1
OSC2
R
G
B
BLINK
OUT
HOR
VDD
CS
CK
A0
A1
A2
A3
BCK
TEST
VERT
R14
R13
R4
R5
R6
R7
C3 0.01/25(N)
C6 100/6.3(M)
IC1
MB88501-436M(E0-G)
MB88501-395M(E0)
R4 R5 R6 R7 R8 R9 R10 R11 R12 R13 R14
K0 K1 K2 K3
EX
X
RESET
IRQ
TC
Vss
Vcc
START
R3 1.8K
R3 R2 R1 R0 P3 P2 P1 P0 07 06 05 04 03 02 01 00 S0 S1 SC/T0
RB1 10K
X1
X1 4.194304MHz
C2 4.7P (K)
C1 4.7P (K)
C7 100P
R11 R10 R9 R8 R7 R6 R5
D59 1S2473T
D58 1S2473T
SW21 MEMORIZE
SW20 SHIFT
SW17 SHIFT
SW16 PROGRAM
SW15 CLOCK
SW22 TIMER
SW19 SET +
SW18 SET −
SW8 CHANNEL UP
SW7 CHANNEL DOWN
SW14 REC
SW13 STOP
SW12 PAUSE STILL
SW6 DISPLAY
E0-G ONLY
D62 1S2473HS
SW4 COUNTER RESET
SW11 F.FWD
SW10 PLAY
SW9 REW
SW5 RETURN TO "0"
PM1
TR1–TR13 2SC2603 (E,F)
R1 R0 P3 P2 P1 P0 07 06 05 04 03 02 01 00
D15 D17 D19 D21 D23 D25 D27 D29 D31 D33 D35 D37 D39 D41
D1–D13 BG5525S
D14 DG5525S
VU VH VL
D16 D18 D20 D22 D24 D26 D28 D30 D32 D34 D36 D38 D40 D42
D15 to 42 1S2473T
DTC143ES
B C E
2SC2603
E C B
R10 1/6W 470K
D70 GMA-01
R11 1/6W 220K
TR15 2SC2603 (E,F)
TR14 DTC114ES
4.7K
4.7K
P104
VU
VH
VL
GND
33V
VT
AFT
To MAIN PCB P607
SW1 AFC
OPERATION PCB V1047A5020
A B C D E F G H I J K
1 2 3 4 5 6 7 8

= B(POWER SUPPLY) LINE

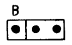
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)

VS-115 EO/EO(Y1)
VS-116 EO-G
OPERATION SCHEMATIC DIAGRAM

NO.5-4 860110A

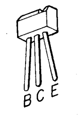

F.FWD
D55
PLAY
D54
REW
D53
RETURN TO "0"
SW5
SW4
COUNTER RESET
STANDBY
D50
F.FWD
SW11
PLAY
SW10
REW
SW9
DISPLAY
SW6
D62
EO-G ONLY
REC
D56
PAUSE/STILL
D57
V1047A5020,21
CHANNEL UP
CHANNEL DOWN
SW8
SW7
R3
R2
REC
SW14
STOP
SW13
PAUSE/STILL
SW12
IB1
C7
C2
C1
X1
TIMER
D60
D58
SET+
SET−
SHIFT
SHIFT
SW19
SW18
PROGRAM
D59
CLOCK
TIMER
MEMORIZE
SW22
SW21
SW20
SW17
SW16
SW15
CHARACTOR POSITION
R5
VR1
IC2 M50450-011P
IC1 MB8850I-395M(EO)
MB8850I-436M(EO-G)
C3
C5
C6
P101
TO MAIN PCB P302
P102
TO MAIN PCB P301
P103
TO FUNCTION PCB P201
AFC
ON
OFF
SW1
VL
VH
VU
PM1
14
13
12
11
10
9
8
7
6
5
4
3
2
1
D14
D13
D12
D11
D10
D9
D8
D7
D6
D5
D4
D3
D2
D1
R10
TR15
D7
D42
D41
D40
D39
D38
D37
D36
D35
D34
D33
D32
D31
D30
D29
D28
D27
D26
D25
D24
D23
D22
D21
D20
D19
D18
D17
D16
D15
TR14
TR13
TR12
TR11
TR10
TR9
TR8
TR7
TR6
TR5
TR4
TR3
TR2
TR1
R11
P104
TO MAIN PCB P601

OPERATION PCB V1047A5020

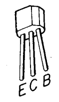


NPN TRANSISTOR

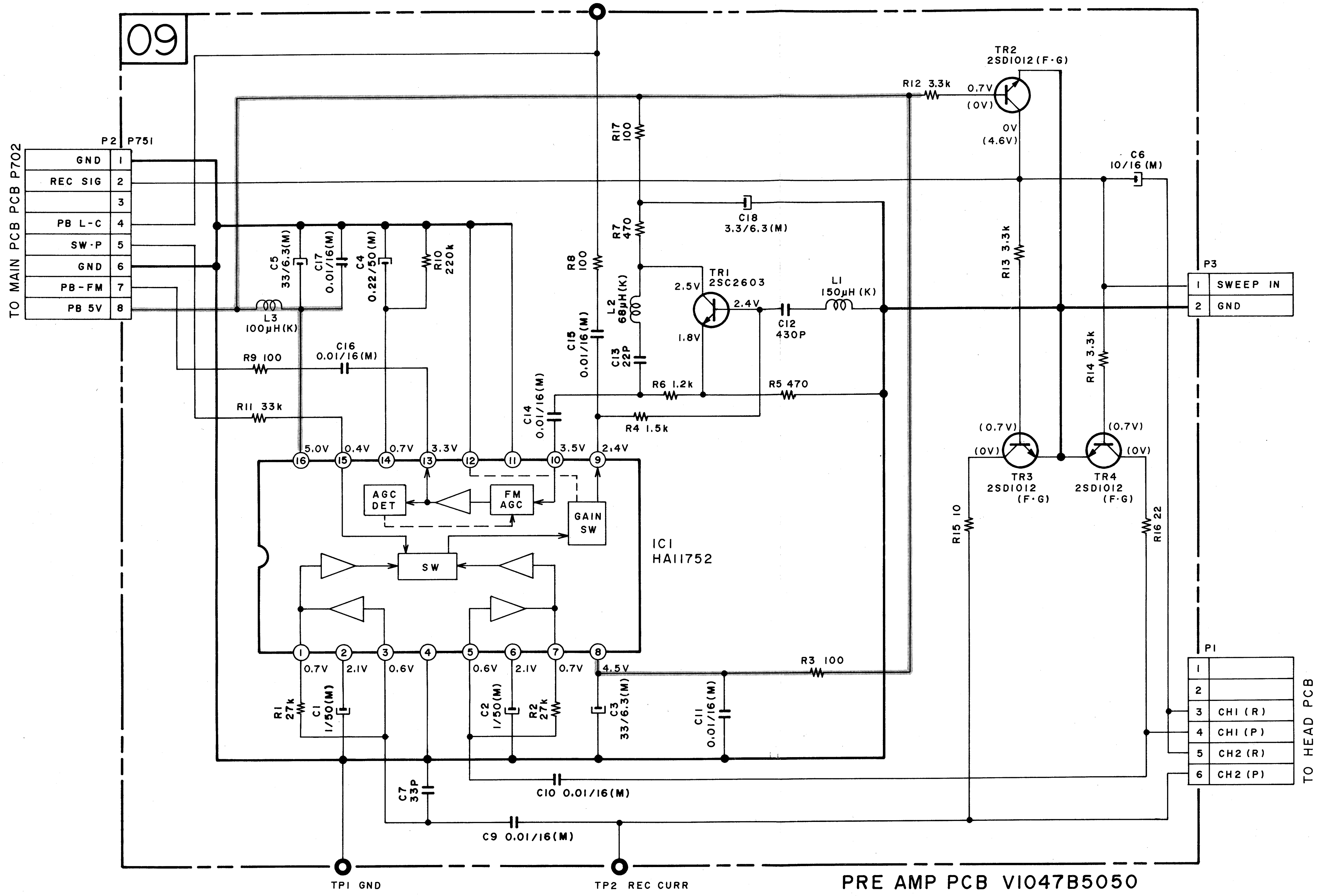
TR1 to 13 .... 2SC2603
TR14 .... DTC114ES



DTC143ES



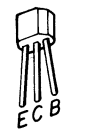
2SC2603


09
TP3 ENVE OUT
P2 P751
TO MAIN PCB P702
GND 1
REC SIG 2
3
PB L-C 4
SW-P 5
GND 6
PB-FM 7
PB 5V 8
L3 100μH(K)
C5 33/6.3(M)
C17 0.01/16(M)
C4 0.22/50(M)
R10 220k
R9 100
C16 0.01/16(M)
R11 33k
R17 100
R7 470
C18 3.3/6.3(M)
R8 100
L2 68μH(K)
C15 0.01/16(M)
C13 22P
TR1 2SC2603
2.5V
2.4V
1.8V
C12 430P
L1 150μH(K)
R6 1.2k
R5 470
C14 0.01/16(M)
R4 1.5k
R12 3.3k
0.7V
(0V)
TR2 2SD1012(F·G)
0V
(4.6V)
C6 10/16(M)
R13 3.3k
P3
1 SWEEP IN
2 GND
R14 3.3k
(0.7V)
(0V)
TR3 2SD1012 (F·G)
(0.7V)
(0V)
TR4 2SD1012 (F·G)
R15 10
R16 22
5.0V
0.4V
0.7V
3.3V
3.5V
2.4V
AGC DET
FM AGC
GAIN SW
SW
IC1 HA11752
0.7V
2.1V
0.6V
0.6V
2.1V
0.7V
4.5V
R1 27k
C1 1/50(M)
C2 1/50(M)
R2 27k
C3 33/6.3(M)
C11 0.01/16(M)
R3 100
P1
1
2
3 CH1 (R)
4 CH1 (P)
5 CH2 (R)
6 CH2 (P)
TO HEAD PCB
C7 33P
C10 0.01/16(M)
C9 0.01/16(M)
TP1 GND
TP2 REC CURR

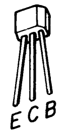
PRE AMP PCB V1047B5050

INDICATED VOLTAGES ARE AT PB MODE
INDICATED IN ( ) ARE AT REC MODE

▬ =B(POWER SUPPLY) LINE



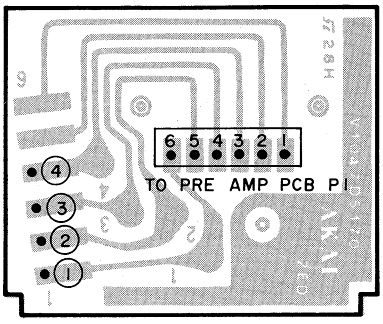
2SC2603



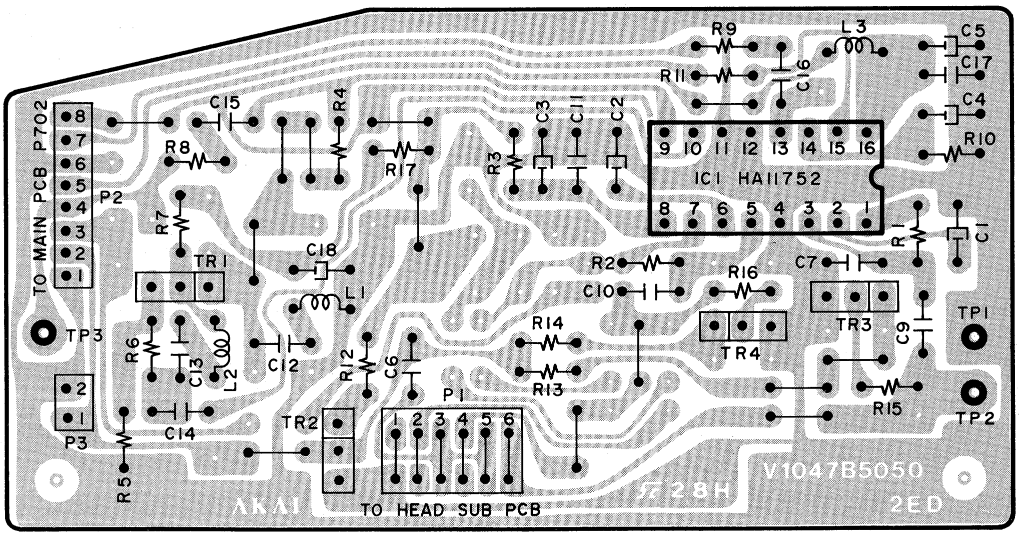
2SD1012

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50WV(J)

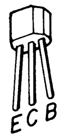
VS-112 EG/EK/EA/ED EV-M/EZ/ES
VS-105 EK
VS-115 EO/EO(Y1)
VS-116 EO-G
PRE AMP
SCHEMATIC DIAGRAM
NO.5-5 860111A(A3) 3


6 5 4 3 2 1
TO PRE AMP PCB P1
4
3
2
1
28H
V1047D5170
AKAI
2ED

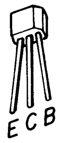
HEAD SUB PCB
V1047D5170 (2ED)


TO MAIN PCB P702
8
7
6
5
4
3
2
1
P2
TP3
2
1
P3
C15
R4
R8
R7
TR1
C18
L1
R6
C13
L2
C12
R12
C6
R5
C14
TR2
P1
1 2 3 4 5 6
TO HEAD SUB PCB
AKAI
28H
R17
R3
C3
C11
C2
R9
R11
C16
L3
C5
C17
C4
R10
9 10 11 12 13 14 15 16
IC1 HA11752
8 7 6 5 4 3 2 1
R1
C1
R2
C10
R16
C7
R14
R13
TR4
TR3
C9
TP1
R15
TP2
V1047B5050
2ED

PRE AMP PCB V1047D5050 (2ED)



2SC2603



2SD1012